DOCUMENT RESUME

ED 426 953 SO 029 880

AUTHOR	O'Leary, B. M., Ed.; Govind, V., Ed.; Schwabe, C. A. Ed.; Taylor, J. M., Ed.
TITLE	Service Needs and Provision in Mpumalanga.
INSTITUTION	Human Sciences Research Council, Pretoria (South Africa).
ISBN	ISBN-0-7969-1851-1
PUB DATE	1998-00-00
NOTE	179p.; For other books in this series, see SO 029 878-883. Colored maps may not reproduce well.
AVAILABLE FROM	Human Sciences Research Council, 134 Pretorius Street, Private Bag X41, Pretoria, South Africa 0001.
PUB TYPE	Numerical/Quantitative Data (110) -- Reference Materials - Geographic (133) -- Reports - Evaluative (142)
EDRS PRICE	MF01/PC08 Plus Postage.
DESCRIPTORS	Demography; *Developing Nations; Elementary Secondary Education; Foreign Countries; *Needs; Preschool Education; Profiles; *Services; *Socioeconomic Status; State Surveys; Tables (Data)
IDENTIFIERS	Basic Human Needs; *Geographic Information Systems; Public Services; *South Africa (Mpumalanga); Variables

ABSTRACT

This book, one of a series that uses Geographic Information Systems (GIS) to outline the need for and provision of services (education, health, housing, electricity, roads, telecommunications, postal services, and police services) in each of the nine South African provinces, presents a global view or indicator of the simultaneous influence of the socio-economic status of people and the level of provision of domestic services and public facilities in the province of Mpumalanga. The view in this book encapsulates its social and service profile, obtained, first, by developing indices for the social and service variables for the district. The book uses a single index, or benchmark, of levels of socio-economic status, household services, and public facilities in each magisterial district, created by combining these indices. In order to provide information about local levels of development, knowledgeable persons involved in service delivery in each province, were contacted for their comments. The books in the series contain maps, tables, a bibliography, and contributions from spokespersons in non-governmental organizations, universities, government departments, service providers, parastatals, and research organizations. Demographic information is based on the 1991 census data. (Contains 32 references.) (BT)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

SERVICE NEEDS + PROVISION

ED 426 953

SO 029 880

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

R.H. Stumpf

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

✓ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

MPUMALANGA

BEST COPY AVAILABLE

SERVICE NEEDS AND PROVISION IN MPUMALANGA

SERVICE NEEDS AND PROVISION IN MPUMALANGA

Edited by

B.M. O'Leary
V. Govind
C.A. Schwabe
J.M. Taylor

Human Sciences Research Council
Private Bag X41
Pretoria
0001

KwaZulu-Natal Regional Office
PO Box 17302
Congella
4013

1998

© Human Sciences Research Council 1998

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording or any information storage and retrieval system, without permission in writing from the publisher.

HSRC Cataloguing-in-Publication Data
Service needs and provision in Mpumalanga / edited by B.M. O'Leary ... [et. al].

p. cm.

ISBN 0-7969-1851-1
1. Geographic information systems. 2. City planning - South Africa - Mpumalanga. I. O'Leary, B.M.
1998
307.120285 – dc21 916.8260285 – dc21

Cover design: Mari Nel
Layout and design: Mari Nel

Published by:
HSRC Publishers
Private Bag X41
Pretoria
0001

Printed and bound by Sigma Press, Pretoria

ACKNOWLEDGEMENTS

The Human Sciences Research Council (HSRC) and First National Bank (FNB) provided the necessary funding required to develop this much-needed database which determines the spatial extent of service provision in Mpumalanga and thereby identifies underdeveloped communities.

Members of the HSRC's GIS Unit are thanked for all their contributions to the project and the final document. Mr V. Govind, Mr W. Mkonza and Mr C. White are acknowledged for their hard work in liaising with contributors, and also for producing the maps and tables. Mr Govind is further acknowledged for assisting with the production and editing of the final report.

Several individuals and organisations contributed to the project by providing information as well as commentary for the report. Without these valuable contributions, the research project would not have been possible. The individuals and organisations listed below are thanked for their contributions:

Capt. M. Bolton
South African Police Service

Ms J. Erasmus
Development Bank of Southern Africa

Dr J. Fairhurst
University of Pretoria

Ms T. Khoza
Masibambane Early Learning Centre

Mr N. Mnisi
South African Post Office

Mr B. O' Leary
Human Sciences Research Council

Mr J.T. Shube
Department of Education

Mr D. Sterley
ESKOM

Mrs E.S.J. van Vuuren
Mpumalanga Council for the Aged

PREFACE

Little is known about the overall availability of services within the new provinces of South Africa in relation to fine-grained demographic distributions that are now becoming available through Geographic Information Systems (GIS) technology. Research that has been done on particular services such as water, sanitation and electricity has largely been undertaken in isolation by parastatal and government service providers and thus has not contributed to a holistic picture of the availability of basic services. In addition, this information has largely been collected in report and tabular format without any spatial representation of service provision relative to demographic distribution.

In this publication an attempt is made to provide, for the first time, a more complete spatial analysis of socio-economic, demographic and service variables for Mpumalanga at magisterial district level. Similar publications have been produced for each of the new South African provinces. Not only will the location of needy communities be identified within the province, but the distribution of services such as water, sanitation, electricity, housing, education, health, roads, telecommunications, postal services, police services and even retirement facilities in relation to the demographic patterns of the province will also be established.

The demographic information is based on the 1991 Census data and the provision of services is based on information provided by organisations acknowledged in Chapter 5. When the 1996 Census data become available at enumerator area or magisterial district level, a temporal extension and trend analysis of this database could be undertaken if funding is available.

It is hoped that this publication will supply developers and planners with relevant information to assist in delivering and maintaining basic services. Development role-players at all levels should see the value of developing and maintaining spatially referenced databases that keep up to date with changing demographic and service patterns. The GIS Unit is currently compiling a database of the geographic location of development projects which will provide another important layer of information for decision makers.

J. Taylor
Regional Director
HSRC: KwaZulu-Natal Office

CONTENTS

		Page
1	**INTRODUCTION**	1
2	**THE CONCEPT OF GEOGRAPHIC INFORMATION SYSTEMS (GIS)**	2
3	**SUMMARY SOCIO-ECONOMIC PROFILE OF MPUMALANGA**	3
4	**APPROACH TO THE STUDY**	5
4.1	Methodology	5
4.2	Social and service indicators	5
4.3	Spatial scales	7
4.4	Data problems associated with choice of spatial scale	7
4.5	Problems associated with obtaining data from service providers	8
5	**INFORMATION SOURCES**	9
6	**SOCIAL FACTORS HIGHLIGHTING THE NEED FOR SERVICES IN MPUMALANGA**	10
6.1	Total population	10
6.2	Employment	19
6.3	Functional literacy	23
6.4	Poverty gap	26
6.5	Dependency ratio	30
6.6	Population density	34
6.7	Index of Need	38
7	**PROVISION OF SERVICES IN MPUMALANGA**	41
7.1	Education	41
7.1.1	Pupil:teacher ratios	45
7.1.2	Adult literacy	48
7.1.3	Pre-school education	51

7.2 Health 56

7.2.1 Average population per hospital bed 62

7.3 Housing 65

7.3.1 Distribution of informal housing 69

7.3.2 Retirement facilities 72

7.4 Water and sanitation 80

7.4.1 Access to sanitation facilities 85

7.4.2 Access to water facilities 90

7.5 Electricity 95

7.5.1 Electrification of formal housing 98

7.5.2 Electrification of informal housing 101

7.6 Roads 105

7.6.1 Access to road infrastructure 108

7.7 Telecommunications 112

7.7.1 Residential line shares 114

7.8 Postal services 117

7.8.1 Access to postal services 120

7.9 Police services 124

7.9.1 Access to police services 128

8 DISCUSSION: The overall picture 132

9 BIBLIOGRAPHY 141

LIST OF MAPS

Map	Description	Page
1	Total population	17
2	Percentage 15 to 64 year olds employed	21
3	Percentage functional literacy: adults with at least Standard 4 education	24
4	Poverty gap	28
5	Dependency ratio	32
6	Population density	36
7	Index of Need	39
8	African pupils per teacher	46
9	Percentage adults between 15 and 64 years with Standard 6 or higher education	49
10	Percentage children younger than 6 years in educare or pre-primary school	54
11	Distribution of hospital beds	63
12	Percentage informal housing	70
13	Percentage population aged 65 years or older in retirement dwellings	78
14	Percentage households with access to bucket and pit latrine facilities	86
15	Percentage households with access to septic tank or waterborne latrine facilities	88
16	Percentage households with access to on-site water facilities	91
17	Percentage households with access to off-site water facilities	93
18	Percentage formal houses electrified	99
19	Percentage informal houses electrified	103
20	Length of roads per square kilometre	110
21	Telecommunications priorities	115
22	Population per post office and postal agency	122
23	Population per police station	130
24	Service Provision Index	138
25	Combined Social Needs and Service Provision Index	140

LIST OF TABLES

Table	Description	Page
1a	Number of persons per magisterial district	16
1	Total population	18
2	Percentage 15 to 64 year olds employed	22
3	Percentage functional literacy: adults with at least Standard 4 education	25
4	Poverty gap	29
5	Dependency ratio	33
6a	Number of persons per km² per magisterial district	34
6	Population density	37
7	Index of Need	40
8	African pupils per teacher	47
9	Percentage adults between 15 and 64 years with Standard 6 or higher education	50
10	Percentage children younger than 6 years in educare or pre-primary school	55
11	Distribution of hospital beds	64
12	Percentage informal housing	71
13	Percentage population aged 65 years or older in retirement dwellings	79
14	Percentage households with access to bucket and pit latrine facilities	87
15	Percentage households with access to septic tank or waterborne latrine facilities	89
16	Percentage households with access to on-site water facilities	92
17	Percentage households with access to off-site water facilities	94
18	Percentage formal houses electrified	100
18a	Households electrified, potential remaining and financial impact	101
19	Percentage informal houses electrified	104
20	Length of roads per square kilometre	111
21	Telecommunications priorities	116
22	Population per post office and postal agency	123
23	Population per police station	131
24	Combined Social Needs and Service Provision Index	139

1

INTRODUCTION

The Human Sciences Research Council (HSRC) has identified the need for socio-economic information on the distribution of resources for infrastructure, services and facilities in South Africa as an important priority. This information will undoubtedly be required for the effective implementation of the Reconstruction and Development Programme (RDP) in the nine provinces.

Consequently the Geographic Information System (GIS) Unit of the HSRC undertook a project aimed at showing the patterns of service delivery in Mpumalanga at magisterial district level and relating this to the socio-economic needs of communities in the province. Infrastructure and service facilities identified for incorporation into the project were education, health, water, sanitation, housing, electrification, roads, telecommunications, postal services, police services and retirement facilities.

In order to focus on districts with relatively poor socio-economic profiles and those which require assistance to improve their basic quality of life, the following variables were mapped: population density, pupil:teacher ratio, poverty, number of households and dependency. The information was combined into an equally weighted Combined Social Needs and Service Provision Index which identifies a range of districts in Mpumalanga as priority areas requiring the attention of provincial authorities.

Although some organisations have done a great deal of research on the availability of services in the province, none has provided the information in an integrated format which allows the distribution of these services and facilities in the province to be visualised. In addition, little work has been done to relate the provision of services to the needs of communities in the region. Consequently, the GIS Unit of the HSRC undertook the project with the intention of entering the information into their GIS system and conducting analyses of the data sets. Maps reflecting the distribution patterns of services and underdeveloped communities in the Mpumalanga province could then be produced.

The production of the document required collaboration with many organisations to obtain information on service provision and provide perspectives as to why specific distribution patterns exist, as well as to outline future trends in meeting the basic service needs of the province. The document has been written to provide a source of information to national and provincial decision makers. In addition, it will be available to development funding agents and planners who provide much-needed service infrastructure to needy communities in the Mpumalanga province.

2

THE CONCEPT OF GEOGRAPHIC INFORMATION SYSTEMS (GIS)

To many people the term Geographic Information System (GIS) is foreign and confusing. In essence, a GIS is a "system of computer hardware, software and procedures designed to support the capture, management, manipulation, analysis, modelling and display of spatially referenced data for solving complex planning and management problems" (Montgomery & Schuch, 1993). A GIS enables the transfer of spatial information from sources such as satellite images, aerial photographs, topocadastral maps and plans into a computer where the information is stored and analysed before being printed out as maps.

Geographic Information Systems (GIS) made their appearance in the late 1960s and 1970s. Some of the pioneering systems developed included those within the Harvard computer graphics laboratory and the Canada GIS (CGIS). The driving force behind the development of GIS stemmed from the need for organisations to solve particular spatial problems irrespective of whether they occurred in a business, academic, resource management, social or engineering environment. Specifically GIS was born to meet the ever-increasing need to use and manage large spatially referenced data sets (Montgomery & Schuch, 1993).

GIS was introduced in South Africa in the early 1980s. Progress in its use was slow and South Africa lagged behind the rest of the world until fairly recently. The reason for this stems largely from sanctions that restricted the exchange in GIS use, software, education and training. However, by the late 1980s and early 1990s GIS had progressed significantly within South Africa to become an important tool in providing information needed by decision makers and planners in implementing programmes such as the Reconstruction and Development Programme (RDP).

The advantages of GIS are numerous. Factors that make it indispensable as a decision-support tool include the ability to overlay and relate several layers of information, to conduct mathematical modelling of data sets, to develop spatial scenarios, to visualise development situations, and to construct spatial decision-support systems. One of its major benefits is that it provides a quick and integrated way of viewing information. In addition, with advances in computer technology and software, it allows for the storage, management, manipulation, analysis and output of large data sets.

For these reasons the HSRC decided to use the GIS as a tool in achieving its goals, particularly for projects such as the Service Needs and Provision project in the Mpumalanga province. The GIS has enabled researchers in the GIS Unit not only to integrate data from a wide variety of sources but, in combining this data, to create new layers of information. Without the GIS it would have been impossible to analyse and spatially represent service provision in relation to the population in the province.

3

SUMMARY SOCIO-ECONOMIC PROFILE OF MPUMALANGA

Mpumalanga has 29 magisterial districts: seven were inherited from the former black areas of Bophuthatswana, KaNgwane and KwaNdebele, while 22 districts were formerly part of the white province of the Transvaal.

The Gini coefficient of income inequality for the Mpumalanga province is 0,67. This shows a slightly greater inequality than the South African average of 0,65. According to Smith (1987) 71,9% of the total South African population were blacks but only 25,5% of the total national income accrued to them. The whites earned 64% of the income, but comprised only 16,2% of the population. The Asians earned 3,2% of the total income and made up 2,8% of the population. The coloureds were 9,1% of the population and earned 7,3% of the total income.

The coefficient of advantage divides a group's income percentage by its population percentage. Scores above one indicate that a group's percentage earnings exceeds its population percentage. Conversely, scores below one indicate lower percentage earnings than population percentage. The whites percentage earnings were 3,95 times their percentage population. The Asians were the only other group with a coefficient of advantage above one, at 1,14. The coloureds and blacks had coefficients of advantage of less than one, 0,8 and 0,35 respectively.

According to Erasmus (1997) the lowest poverty gaps were found in the industrial core of the province, namely the Witbank and Hoëveldrif/Highveld Ridge districts. Spatially, poverty in the former Transvaal portion seemed to be concentrated in the southern-most districts of Mpumalanga. In the former homelands the poverty gaps were notably higher. In the former KaNgwane, Eerstehoek and Nkomazi there were per capita poverty gaps in excess of R500 per year. Nsikazi, which borders Nelspruit and Witrivier/White River, had a relatively lower albeit still high poverty gap of R365 per person per year. KwaNdebele, which is closer to the Gauteng province, had poverty gaps of between R374 and R409 per person per year, while Moutse, which borders Groblersdal, had a poverty gap of R558, the highest per capita poverty gap in the province.

All socio-economic indicators showed that the formerly white Transvaal portion of the province was better off than the two former homeland areas. These areas functioned as dormitory areas for both Mpumalanga and Gauteng, hence the workers left the dormitory areas in search of employment while members of the extended family remained behind. As a result, there were relatively few workers in the rural areas, and the number of non-working people was rather high. This resulted in high dependency ratios in the homelands and lower ratios in the former white parts of the province (Erasmus, 1997).

According to Schube (1997) the pupil:teacher ratio was higher than the 37:1 norm in all magisterial districts, except in those on the eastern side of the

province, namely Nelspruit (35:1), White River (33:1) and Barberton (35:1). The highest pupil:teacher ratios were found in the north-west and southerly districts of Mpumalanga. The highest ratio was in Groblersdal (51:1), followed by Highveld Ridge (47:1) and Wakkerstroom (also 47:1). The pupil:teacher ratio in Highveld Ridge is of particular concern, since there are a high number of enrolments (18 860) and the area is densely populated area – 105 people per km² according to the 1991 Census (Schube, 1997).

The use of socio-economic and service data provide a more complete picture of conditions throughout the province. The use of social and service indices, described in the next chapter, facilitates the use of a single index that summarises the effect of five social and ten service variables.

4

APPROACH TO THE STUDY

4.1 Methodology

The aim of the project was to detail the access of the population to services in each magisterial district of the Mpumalanga province. This was not an exercise in mapping the exact location of pipelines supplying water to urban areas for example, but rather in mapping the percentage of households that have access to water supply. Thus the study has two main aspects: the socio-economic profile of the population in each magisterial district, and secondly, the relative access to these services between districts.

The socio-economic variables considered were

- population density,
- total population,
- employment,
- dependency,
- poverty,
- functional literacy,
- pupil:teacher ratios.

The standard of living of the population in a magisterial district will often be an indicator of the access to services. Data relating to the socio-economic variables were obtained from the 1991 Census.

The services considered were

- education,
- electricity,
- housing,
- roads,
- water and sanitation,
- post offices,
- retirement dwellings,
- health facilities,
- police services,
- telephones.

Data on these services had to be obtained from the service providers before being georeferenced and entered into a GIS database format. Once the accessibility of services to the population had been mapped, maps and tables were distributed to experts in each service field for their comment.

4.2 Social and service indicators

A global view or indicator of the simultaneous influence of all the social and service indicators is necessary to encapsulate the social and service profile of

each district. This will clearly arrange all districts along a social and service gradient, thereby facilitating prioritisation of districts for development interventions. This can be done firstly by developing indices for the social and service variables that represent the social and service profiles of each district. Thereafter these indices can be combined to give a single index of the level of development of a district. These indices were developed for districts at both the national and provincial levels. This allows comparisons to be drawn between national and provincial priorities which differ owing to varying provincial and national minimum and maximum values per variable. The variables selected therefore needed to have complete data coverage at both national and provincial levels.

The selected social variables were the poverty gap, pupil:teacher ratio, dependency ratio, total households, and population density. The service variables were the ratios of population to police stations, post offices and hospital beds; the ratio of road length to district area; the ratio of 6 to 17 year olds to schools; the percentages of fully serviced houses, informal houses, formal houses electrified and informal houses electrified and telephone shares. The social index had five variables each with twenty ranges giving a total number of 100 ranges. Additional columns were created to assign the rank of the variable per column. The theoretical minimum and maximum social index value would then be 5 and 100 respectively. The values for each variable could not be ranked in ascending order in all cases. High values in poverty, pupil:teacher ratios, dependency and population densities suggest underdevelopment, but a high value for total households would not. High index scores indicate underdeveloped districts needing development interventions. The corollary to this is that a district not requiring development intervention based on a social index would have a low index score and the following social profile: a low poverty gap, low pupil:teacher ratio, low dependency ratio, low population densities and a high number of households.

The service index had ten variables each having ten ranges. Here the theoretical minimum and maximum values are 10 and 100, respectively. Each service variable had to be ordered according to whether high scores were beneficial to a district or not. A district with a low service index score and not requiring development intervention would have the following service profile: low ratios of population to police stations, post offices and hospital beds; a high ratio of road length to district area; a low ratio of 6 to 17 year olds to schools; high percentages of fully serviced houses, formal houses electrified and informal houses electrified; high telephone shares, and a low percentage of informal houses. A district with a high index score requires development intervention and would have the following service profile: high ratios of population to police stations, post offices and hospital beds; a low ratio of road length to district area; a high ratio of 6 to 17 year olds to schools; low percentages of fully serviced houses, formal houses electrified and informal houses electrified; low telephone shares, and a high percentage of informal houses.

A combined index would add the service and social indices, both having a maximum of 100, and divide the sum by 2, giving a maximum to the combined

index of 100. As in the social and service indices, the higher the combined index score the greater the degree of underdevelopment.

4.3 Spatial scales

Originally, the spatial analysis of service provision was to be based on the enumerator areas (EAs) from the 1991 Population Census, but for logistical reasons, outlined below, it was decided to confine the analysis to census districts. An EA is the smallest building block of the census and has been defined by the Central Statistical Service as "consisting of a number of visiting points ... a visiting point is any occupied unit, e.g. a house, flat, caravan, hotel etc." As one would expect, EAs are denser in urban areas than in rural areas. Census districts are groupings of EAs and, in most instances, follow boundaries similar to magisterial district boundaries.

The reason for the shift in focus from EAs to census districts is that most of the information on services are and service provision is not readily available at EA boundary level but has been collected and is available at census district level. In addition, information at this level will provide decision makers and planners at a national and provincial level with appropriate information. Once it has been verified that an area is in need of services, more detailed information, which is not presently available at a detailed level such as EAs, can be collected.

Having said this, there are obvious problems in the analysis of service provision on a census district scale. The major problem is that there is a tremendous variation (demographic as well as in service provision) within districts. In a single district there may be well-provided formal towns, while the sparsely populated rural areas may have high poverty levels and the worst rates of basic service provision. When one analyses services at a census district level, these variations could be lost in averaging and aggregation.

4.4 Data problems associated with choice of spatial scale

Much of the service supply data acquired from the service providers was at a town level. So, for example, information was obtained for towns that have post offices, a number of pre-school facilities, etc. Each of the towns was then identified and placed in the correct census district. Often towns were not in the census database or on maps or atlases and thus personal knowledge and experiences had to be relied upon.

The problems that have been highlighted above, stress the need for better data collection, as well as the need to set standards on the spatial scales at which data is collected. This would greatly improve analyses in this field and would be an indispensable source of information to planners and service providers. The use of GIS will facilitate this process since spatial units already exist at different scales from which data can be aggregated. Not only will this result in the standardising of databases, but it will also assist in the provision of information over several years and enable trend analyses to be done.

4.5 Problems associated with obtaining data from service providers

One of the main problems encountered in this project was the lack of clear definitions of services. This resulted in information being entered into the GIS and maps being produced for comments by the service providers, only to discover that not all, or conversely too many, facilities had been included in the definition of that service. It was thus important to establish a clear understanding of what is meant by a service and what facilities form part of such a service.

Service providers were largely unfamiliar with the GIS and how it could be used. This often resulted in the provision of information that could not easily be entered into the GIS, thus forcing the research team to assess the information before including it in the data set. However, through a process of consultation, this problem was largely addressed and only relevant information was entered.

The format of information on services was often unsuitable for incorporation into the database. This meant the research team had to spend many hours converting the data into a suitable format. In addition, it was not always easy to enter digital or database information from other sources into the GIS, but eventually ways were found to transfer all the data into the GIS software.

Other aspects which plagued the project were inaccuracies in the different data sets, outdated databases and a lack of verified information. Producing maps from a GIS often makes it possible to identify inaccuracies in the information and make subsequent corrections. Experience suggests it is necessary to plan for such delays well in advance.

In solving these problems, the GIS team of the HSRC has added to its expertise in the fields of spatial database development and GIS research. As a result of this report there is now a comprehensive collection of spatial and attribute data related to service provision for census districts in Mpumalanga. This database can be further developed, refined and provided to any organisation involved in service provision and development in the province.

5

INFORMATION SOURCES

Research on providers of service information and literature reviews was conducted by members of the GIS Unit. All the major known service providers were contacted and appropriate data sources identified. Although attempts were made to obtain recent and comprehensive sources of information, it is acknowledged that more definitive databases may exist elsewhere in the country.

It must also be repeated that certain data sets may have inherent inaccuracies (see Introduction). However, what is important is that the information was obtained from the best known sources and, in some instances, the only known sources. The information is therefore considered the best base available for use by the RDP and from which more refined data can be gathered.

SERVICE TYPE	SOURCE OF DATA	FORMAT AND LEVEL OF DATA	DATE CAPTURED	ORGANISATION
Demographic information	Spatial data captured from 1:50 000 (rural areas) and 1:6 000 (urban areas). Database extracted from 1991 Census	Digital data at census district level	1991	Human Sciences Research Council CSS
Education facilities and indicators	Education Atlas of South Africa	Digital data at a census district level	1994	Education Foundation
Health facilities and utilisation	ReHMIS	Digital data at a point location level Tabular data at health region level	1994 1996	Department of Health Health Systems Trust
Poverty levels	1991 Census Poverty database	Digital data at a census district level	1991	Human Sciences Research Council
Post Office	Post Office: Sales & Marketing Department	Tables at a district level	1994	Post Office
Telephone lines	Telkom: Technology strategy	Tables of residential line shares at district level	1995	Telkom
Roads	Surveyor General	Line digital data	1991	Surveyor General
Water supply and sanitation	National Electrification Forum (NELF)	Digital data at a census district level	1994	Eskom
Electricity supply	National Electrification Forum (NELF)	Digital data at a census district level	1994	Eskom
Police facilities	SA Police Services	Tables at a magisterial district level	1994	SAPS

6

SOCIAL FACTORS HIGHLIGHTING THE NEED FOR SERVICES IN MPUMALANGA

6.1 Total population

This commentary on population dynamics in Mpumalanga province is broken down into the following sections: introduction; population pressure; issues relevant; population distribution (size – area of districts, total population, population density); and conclusion.

Population policy

The Draft White Paper for a Population Policy published in September 1996 recognises the important interrelationship between population, development and the environment. It defines sustainable human development as "meeting the needs of the present generation and improving their quality of life without destroying the environment or depleting non-renewable natural resources, in order to avoid compromising the ability of future generations to meet their own needs" (*Government Gazette*, 1996:7). Guided by this definition a number of population concerns and their underlying factors are identified. These population concerns cover four main areas:

- Lack of the availability, use and analysis of population data, especially as related to development planning, as well as a lack of institutional and technical capacity for the analysis of population data and for integrated population and development planning.
- Problems related to characteristics of the population itself. These include the structure of the population, the high incidence of fertility and unwanted teenage pregnancies, and high rates of premature mortality, infant mortality and maternal mortality.
- The inadequate analysis of problems related to migration and settlement patterns such as the causes and consequences of urban and rural settlement patterns, as well as the nature and impact of international immigration.
- Problems related to population growth and population pressure in relation to the growth of the economy such as the backlog of social needs to be met, high levels of unemployment and the impact on the environment of population pressure and production and consumption patterns.

The Draft White Paper on Population recognises the link between factors such as poverty, high mortality rates, low status of women, a lack of democracy and high fertility on the one hand, and population growth rates on the other. Strategies have been adopted which will address these concerns. In the past population policy was aimed mainly at fertility control, restricting migration and controlling settlement patterns. The new policy aims to address the problem of population pressure by influencing the determinants of high population growth through a

wide range of strategies which include reducing poverty, improving primary health care services, addressing environmental issues, promoting responsible and healthy sexual and reproductive behaviour in young people, improving education for all and through improving the status of women. In order to reduce population pressure in both rural and urban areas the policy aims to provide improved social services, infrastructure and employment opportunities in rural areas through rural development. This should slow down the rapid rural-urban migration and improve the capacity of rural areas to provide a livelihood for people living there.

K.A. Leslie
(Formerly of the University of Venda)

Introduction to population dynamics

A salient feature of the distribution of the population in the Mpumalanga province is its predominantly rural character with few large towns. In the national urban hierarchy, Mpumalanga has six "second order" urban areas[1] each with a dominant urban centre: Witbank, Middelburg, Bethal, Secunda, Ermelo and Nelspruit. As a group these are expected to experience future growth, but at a somewhat lower rate than the country's major metropolitan areas. Despite its proximity to Gauteng and its historical dominance, Witbank could lose its pre-eminent position in the province although its geographic position will prevent economic decline. According to present development trends, it is feasible to assume that Nelspruit is most likely to grow more rapidly and form an equally important core area in the province, hence its status as the provincial capital, a choice made after considerable debate and investigation. Nevertheless, the advantage of having these vibrant and growing centres in the extreme west and east of the province are seen, in a development context, as highly significant and a *status quo* to be fostered and maintained.

The location and function of these large towns allows the province to be divided into three sub-regions. South of the main west-east infrastructural axis (road, rail and power lines) linking Gauteng with Mozambique on the coast and Swaziland as a neighbouring country lies the **Eastveld**, traditionally and still characteristically a major farming grassland region interspersed with localised mining communities. Middelburg, Bethal and Ermelo typify this form of development and Secunda is the home of Sasol, the oil-from-coal processing plant. North of the Eastveld, which covers an area of 34 441 km^2, has a total population of 938 140 and generally has a low population density of 38 persons per km^2, the rest of the province falls neatly into two almost equally sized divisions: the **Highveld** in the north-west, 19 125 km^2 in extent with a population of 799 311 and a density of 86 persons per km^2, with Witbank as main town; and the **Lowveld** in the north-east, comprising 26 719 km^2 with a population of 916 030 and an extremely high population density figure of 128 persons per km^2. Nelspruit, a communication and service centre for a wide and diverse hinterland, is the main urban centre in the Lowveld. This natural subdivision will be the basis of the demographic analysis of the province as a whole.

Mpumalanga is South Africa's second smallest province (818 160 km^2), covering 6,7% of the country's area. It contains 8,4% of South Africa's population with a functional urbanisation rate[2] of 43,2%, whereas the figure for South Africa as a whole is 61,4%[2]. The impact of urbanisation, especially on the larger urban areas, has led to the creation of informal settlements. The average annual population growth rate for 1980-1990 was 3,35% and for 1990-1995, 2,12% (Calitz, 1996). Mpumalanga (formerly known as the Eastern Transvaal and/or Economic Region F) contributed 8,4% to South Africa's GDP in 1991.

---

1 As classified by Calitz, 1996:22.

2 This includes official urbanization, as well as people clustered around towns or in towns without official recognition as such (peri-urban) and people living in the vicinity of an urban area who are dependent on it for income (semi-urban) (Erasmus, 1995:128)

Population pressure

Generalisations with regard to population pressure in Mpumalanga have to be seen against a background of diversity. Differences within and between areas with regard to the natural resource base, climatic, topographic, geological and ecological as well as human resources are highly significant in Mpumalanga. This underscores the fact that any form of assessment of the people's needs with regard to service provision would have to be conducted at the local and sub-regional level and viewed as part of the provincial political and economic structure. Based on 1990 data[3], comments given here are done so with reserve. The past five years have seen significant socio-political and economic changes that have, to varying degrees, had a profound effect on the present situation. Subsequent development too could well be affected. A particular point is that current administrative boundaries incorporate several districts formerly part of other administrations (Gauteng, Bophathutswana, Lebowa, Gazankulu, KaNgwane, KwaNdebele) where very different sets of circumstances prevailed, creating very different patterns and processes.

According to Erasmus (1993), life expectancies, 63 years for males and 69 for females, followed national trends although the coloured population, a small group, fared better in Mpumalanga than in other regions except Gauteng. Infant mortality (41,2 live-born children who will die under the age of one year per 1000 live births) was close to the national average but high (51,9) among the Africans. The total fertility rate varied from 2,1 to 3,7 (3,5 average) which helps explain the wide range of percentage population growth rates between districts: 10,01 in Eerstehoek, 9,7 in Mhala, -4,33 in White River in the Lowveld; -3,12 in Balfour, -2,46 in Standerton and –2,35 in Ermelo in the Eastveld; and 0,29 and 1,34 in the larger towns of Middelburg and Witbank in the Highveld. These figures illustrate spatial differences and account for a general increase in population numbers, although more recent data reveal that there is an obvious decline. An alarming statistic was the high rate of teenage births – 21,8% as opposed to a national statistic of 10,4% of live births during a specific year, born to women below 20 years of age irrespective of their marital status.

Increasing population numbers puts pressure not only on environmental resources, but also on people's personal resources, their living conditions and opportunities to improve capacity. Crowded living quarters was a major problem in Mpumalanga: room density (average percentage occupancy of habitable rooms in which 100 depicts 100% occupancy) varied from 57,7% among the whites to 136,4% among the coloureds, 95% among the Indians and 123,6% among the blacks as opposed to an overall national average 124,8%. Disparate conditions are very evident.

From Erasmus (1993)/The 1990 data it is clear that other limiting factors for human development included the percentage of 6-14 year old children not attending school and the literacy levels (percentage persons aged 13 years and over with at least a Standard 4 qualification). For the former Mpumalanga's data

---

[3] Erasmus, 1993:121-123

were on a par with the national average (13,5% and 13,6% respectively), yet it had a lower level of literacy (48,5%) than the national average of 57,7%.

Demographic trends create specific issues relevant to meeting the needs of people in improving their quality of life. These trends can be illustrated on maps and the resulting spatial patterns identified.

Issues relevant to meeting the needs of future population pressure

Meeting the needs of future population pressure should be based on an understanding of the province's functioning economy, its population composition with particular reference to age and gender, an acknowledgement of the status of human resource potential, and assessing and satisfying basic needs so that service provision will address quality of life issues appropriately.

Erasmus (1993)/The 1990 data show that agriculture (21%) remained the single most important provider of formal employment opportunities in the province. The largest concentrations of mine workers were located in the Eastveld (20,6%) and the Highveld (13,3%). More than 40% of the province's professional, managerial and administrative personnel were found in the Lowveld because of the service orientated nature of the area. In all areas services were a prominent economic sector employing the largest percentage of the formally employed labour force (25,7%). In the Lowveld agriculture, trade and catering, and manufacturing were important and absorbed large numbers of the formally employed.

In the Highveld manufacturing, agriculture and mining ranked as major economic sectors. In the Eastveld agriculture and mining, followed by manufacturing, were dominant spheres of economic activity. In the Highveld and Eastveld electricity production was also important. Between 1985-1991 there was a boom in the construction industry in the Lowveld (286,9% growth) and Highveld (193,1% growth compared with provincial average of 100). It should be noted however, that the mining sector was losing ground to manufacturing. Moreover, absorption into the formal economy decreased despite an economic growth rate of 4,2% during the past decade. Erasmus found that manufacturing and energy, mining and agriculture were under pressure owing to market integration and the ill-effects of air and water pollution. His investigations also revealed that, although economic growth had been sustained, the ratio of personal income to GGP ratio had decreased. Only 41% of production had accrued to the inhabitants of the area as much of the income was remitted to the head offices of firms such as Sasol, Eskom, and the mining houses.

Income per household varied significantly between urban and non-urban populations and between population groups and magisterial districts. The Lowveld was worst off with 65,3% of the households earning less than R5 000 p.a. and only 4,9% having an income of over R30 000 p.a. The figures for the province as a whole were 55,4% and 14,1% respectively. There was growing participation in the informal sector (20,4%) which has become one of the solutions to the high unemployment rate. Unemployment increased dramatically in the decade preceding 1991 and the provincial average rose from 4,6% to 17%

in 1991 with the Highveld, the most highly urbanised (34%) of the subregions, being worst off at 21,3%.

A major issue relevant to meeting the needs of future population pressure is to address the issue of poverty. Mpumalanga has a real although often invisible sector living in poverty. According to Erasmus (1993), the spatial distribution and the age and gender composition of a population provided an important clue to appreciating the level of poverty of an area. The gender composition showed an absence of men in non-urban areas (0,98) whereas in urban areas the ratio of men to women is closer to 1:1. All three subregions had a large percentage of youth under 15 years of age. The age structures differed in the regions, but related closely to economic and population trends. The Lowveld had the highest dependency ratio of 3,4 persons per economically active person, the Highveld 2,8 and the Eastveld 1,7. Adult male migration was common practice and a rapidly growing tendency, thus female-headed households prevailed and subsistence agricultural activity in rural areas and growth in informal settlements in urban areas caused rising poverty in both. Moreover, there was income inequality between and within subregions and inhabitants. Therefore poverty is a vital factor to consider in assessing service provision, as is the marked income inequality between and within subregions and inhabitants.

Nevertheless, it was found (Erasmus, 1993) that Mpumalanga had a strong economic base and was a prosperous province but that human development (HDI: 0,75, which was higher than the national index) was declining in all areas as poverty increased. Service provision in the province needs to support individuals' coping strategies and reduce impediments to stem the tide of a declining standard of living. Improved literacy levels would give access to resources, life expectancy is related to health and nutrition status and GDP per capita to a person's disposable income. All aspects are relevant to a satisfying quality of life.

Population distribution

Despite similar general features, there are notable differences between the province's three subregions in terms of size, population numbers, population density and economic structure. Meintjies *et al.* (1995), points out that 53% of the population lived in the traditional homeland areas that represent less than 10% of the total surface. Yet these areas recorded the highest population growth rates, especially in the Lowveld.

Size of districts in terms of area

The map shows that, generally, the areas occupied by the black population groups are small in size: Mkobola (2 147 km^2) is the largest of these, whereas sixteen other districts in the province are larger. Pilgrim's Rest is the largest (9 542 km^2) and a third of all districts are larger than 3 000 km^2. Of the smallest third (under 1 600 km^2), 73% are former homeland areas. The largest third (over 3 000 km^2) are the peripheral Pilgrim's Rest, Lydenburg, Standerton, Piet Retief and Barberton) and farming districts (Ermelo, Middelburg, White River, Carolina and Belfast).

Total population

Population size and growth in the province have been affected by forced removals, natural population growth and, in more recent times, an influx of refugees particularly from Mozambique. A marked feature of the province is its variation in population. The maps show there are highly populated areas (well over 200 000 with Nsikazi the highest at 533 003 people) formerly administered by the self-governing territories, particularly Eerstehoek, Nsikazi and Nkomazi of the former KaNgwane in the east, Mhala (253 298)[4] in former Gazankulu and Mapulaneng (215 246)[5] in former Lebowa in the north. The latter two districts, not shown on the map, lie north of White River inside the Pilgrim's Rest district. They are in marked contrast to the next two largest population centres of Witbank (classified as part of the Highveld) and Highveld Ridge (classified as Eastveld) which owe their origin to mining and industrial development. The third group with a high population comprises the former black homeland areas of Mdutjana and Moutse and, extending from Witbank, its unsuccessful rival in the field of economic development, Middelburg, although very much the heart of the agricultural activity of the Highveld region, and Ermelo, the main centre of the farming area of the Eastveld.

In the centre of Mpumalanga (Carolina, Belfast and Waterval-Boven) lies a core of sparse settlement (under 50 000 people). On the north-eastern periphery lie Pilgrim's Rest and White River, large areas with small populations. On the southern fringe are Amersfoort, Wakkerstroom and Volksrust, districts with populations of under 35 000 people. Lydenburg, a large district with a small population, lies in the north and Balfour and Delmas, formerly considered part of the Rand, and Moretele 2 lie in isolation in the east.

Between the two extremes of dense and sparse population is a group of districts with populations of 50 000 - 100 000 of which Nelspruit is the only major urban area. Broadly speaking, population numbers fall into five main groupings, a distribution that highlights the extremes and the predominance of districts with small populations, a negatively skewed distribution:

Table 1a **Number of persons per magisterial district**

Number of persons	*f* (Magisterial districts)
> 200 000	5
150 001 - 200 000	2
101 000 - 150 000	4
50 000 - 100 000	9
< 50 000	11

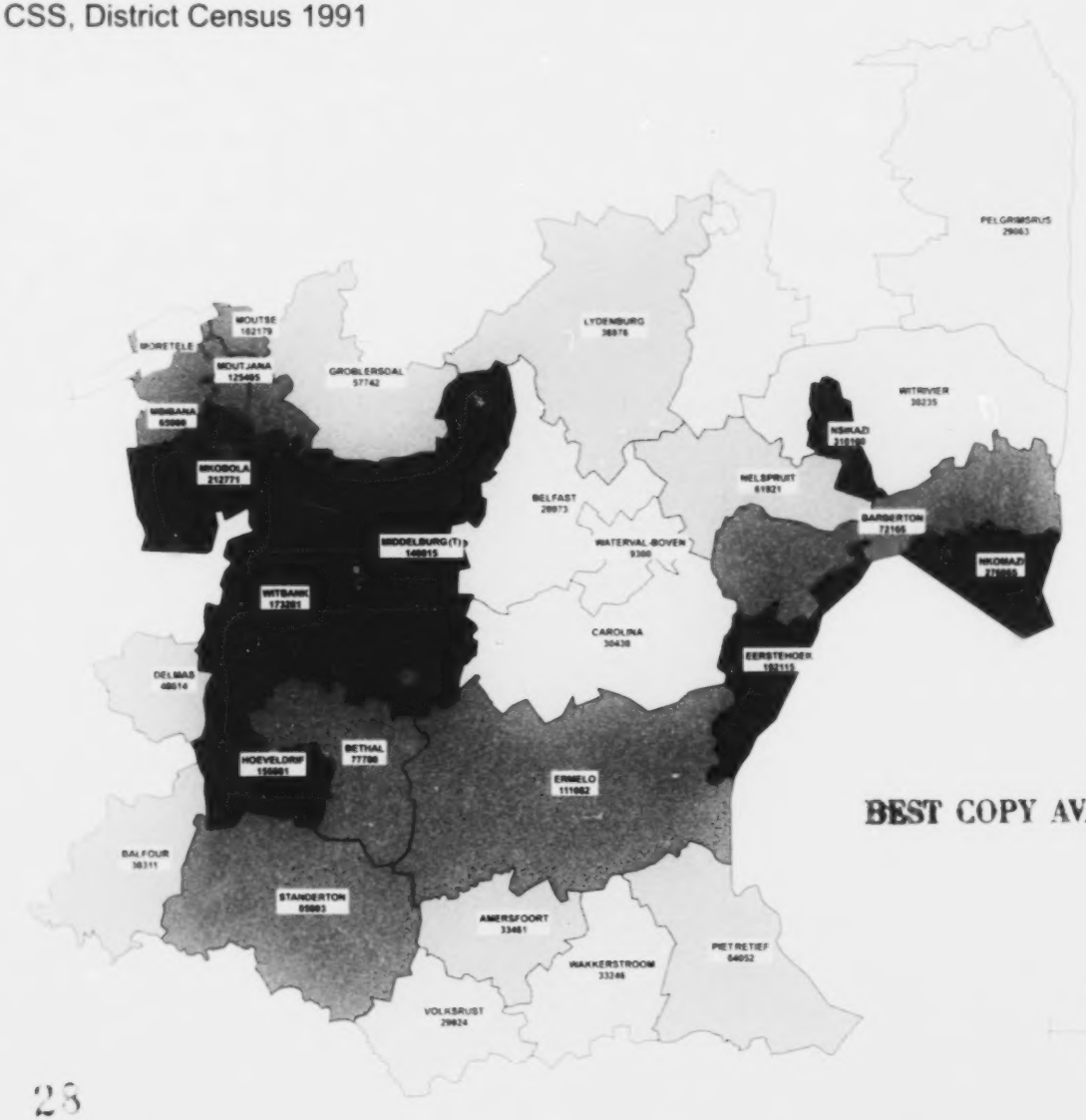
J. Fairhurst
University of Pretoria

4 Data from Meintjies *et al.* 1995:21.
5 *Ibid.*

MAP 1 : TOTAL POPULATION

Source : CSS, District Census 1991

HSRC
RGN
GIS UNIT



N

Total population

- 9 300 to 33 246
- 33 246 to 64 052
- 64 052 to 125 485
- 125 485 to 310 160
- No data

KM

50

BEST COPY AVAILABLE

Table 1 Total population

DISTRICT	TOTAL POPULATION
Amersfoort	33 461
Balfour	38 311
Barberton	72 165
Belfast	28 973
Bethal	77 780
Carolina	30 438
Delmas	48 614
Eerstehoek	192 115
Ermelo	111 082
Groblersdal	57 742
Hoëveldrif/Highveld Ridge	155 881
Lydenburg	36 976
Mbibana	65 989
Mdutjana	125 485
Middelburg (M)	140 015
Mkobola	212 771
Moretele	no data
Moutse	102 179
Nelspruit	61 921
Nkomazi	276 965
Nsikazi	310 160
Pelgrimsrus/Pilgrim's Rest	29 063
Piet Retief	64 052
Standerton	85 893
Volksrust	29 924
Wakkerstroom	33 246
Waterval-Boven	9 300
Witbank	173 281
Witrivier/White River	30 235

6.2 Employment

Definition

The economically active population (also called the labour force) consists firstly of the employed, that is people who have secured formal paid employment. Secondly, it also includes people who have small unregistered businesses in the informal sector, such as roadside stalls selling fresh produce. Thirdly, it includes the unemployed. The map which follows is based on formal employment figures as people in the formal sector are more likely to earn a "living wage". People in the informal sector will often take the first available formal sector job given the fickle nature and low earnings of the informal sector.

The map shows the formally employed as a percentage of the adult population aged 15 to 64. Using the adult population rather than the more commonly used labour force can be misleading as the resulting rates of employment will be artificially low: the total adult population includes people, mainly women, who work in the subsistence agricultural sector (relevant only in the former homelands); as well as people who are generally not available for employment, such as housewives who do not want to work, full-time students, those who have taken early retirement, and so forth. The student component may be quite large as the adult population is defined as people aged 15 or older. Fifteen year-olds are likely to remain at school for a few more years, and their age group (15 to 19) is particularly sizeable. In addition, at the time of the census (1991) women could get a state pension at age 63, which would have encouraged early retirement in poorer communities.

As many families of migrant workers live in the dormitory areas, it is likely that a number of migrants were in the dormitory area at the time of the census. Since many migrants have one month leave a year, the percentage of "resting" migrants could well have been close to 8%. When polled, these migrants would have shown up as employed workers, thus artificially inflating the employment figures in the former homelands. It is possible to adjust the employment figures in the homelands downwards to eliminate this phenomenon. To balance the total employment figures, it would be necessary to adjust the employment in the towns upwards to include the resting migrant workers. However, there is no way of knowing where these migrants may have worked (it could even have been in another province) and any adjustment to urban employment figures would be guesswork. This approach was therefore not followed for Mpumalanga.

Data sources

The figures used in the calculation of the employment rates are from the 1991 Population Census of the Central Statistical Service. This census is the most recent source of information regarding economic activity on a district level. The 1991 Census has come under scrutiny owing to an apparent undercount of the population. The undercount was more severe in informal settlements in metropolitan areas and in the semi-urban settlements in deep rural areas. Therefore, data for the small and medium-sized towns in Mpumalanga seem reasonably accurate, but figures for the former homelands may be too low.

Patterns of employment

Mpumalanga consists of a section of the former Transvaal province as well as the two former homelands, KaNgwane and KwaNdebele. The latter areas functioned as dormitories for both Mpumalanga and Gauteng, the former Eastern Transvaal and the Witwatersrand, and had few employment opportunities in the formal sector. According to the 1991 Census, the former white districts of the Eastern Transvaal had the highest employment rates. In these areas rates of employment ranged between 28% and 66% of the adult population. The rates of formal employment as a percentage of the people who actually want to work, that is the economically active population or labour force as defined above, were between 57% and 75%. Not surprisingly, the commercial agriculture and forestry areas had high rates of employment, as did the capital, Nelspruit. Employment rates were also high in the western corridor from Highveld Ridge to Groblersdal. The southern-most districts again had the lowest employment rates among the former Transvaal districts.

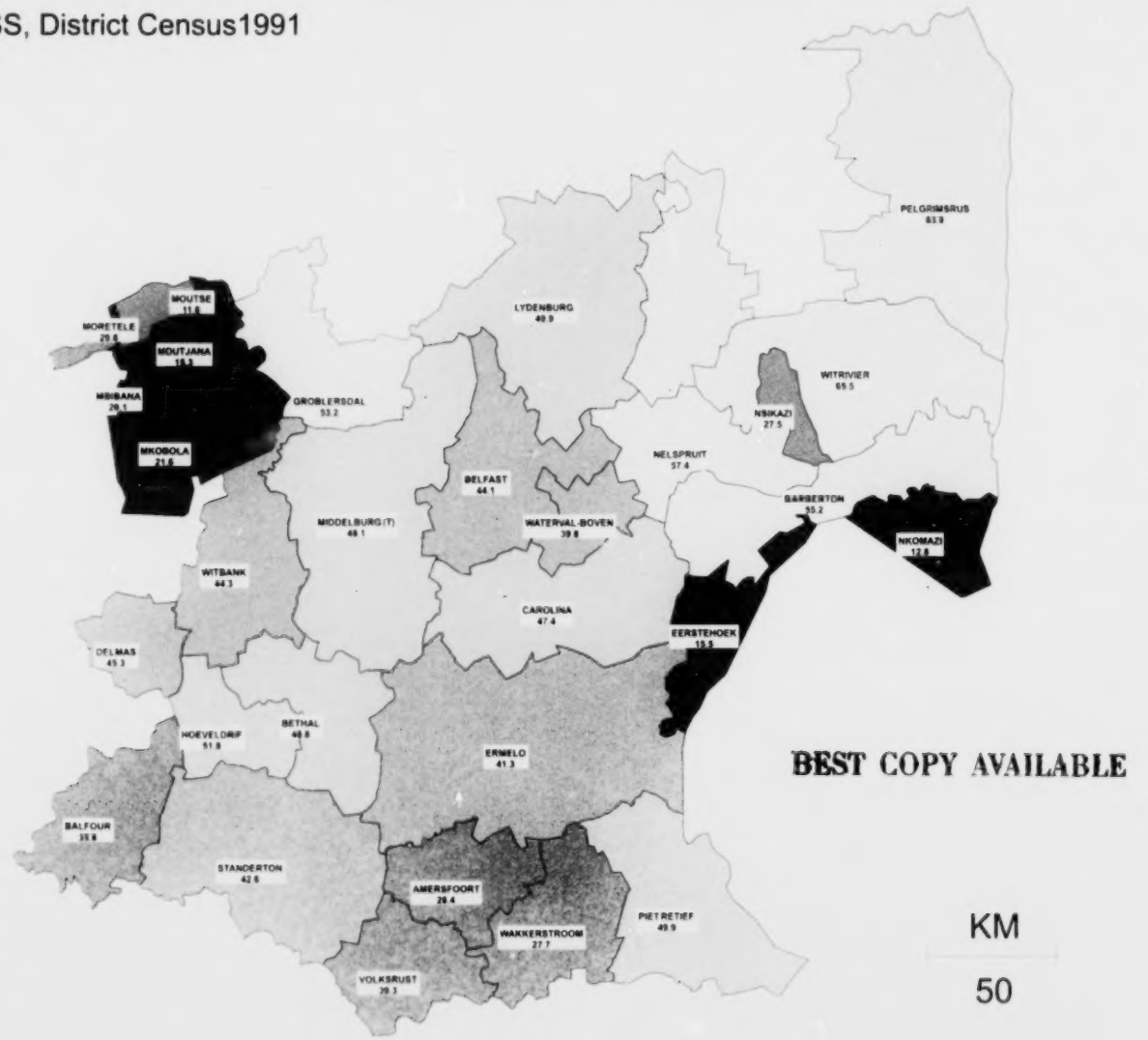
In the former homelands the highest rate of employment was predictably in Nsikazi which lies between Nelspruit and White River. This district could offer employment to 28% of its adult population and 64% of its labour force. Employment rates in the other rural districts were significantly lower - only between 34% and 49% of the labour force and 12% and 28% of the adult population could find work. The difference between using the adult population and the labour force shows up clearly in these figures. For example, Nkomazi could only employ 13% of the adult population but these people formed 47% of its labour force. It is obvious from the figures that this district has a large subsistence agricultural sector.

J. Erasmus
Centre for Policy and Information
Development Bank of Southern Africa

MAP 2 : PERCENTAGE 15 TO 64 YEAR OLDS EMPLOYED

Source : CSS, District Census1991

HSRC
RGN
GIS UNIT



BEST COPY AVAILABLE

KM

50

N

% employed

	12 to 22
	22 to 39
	39 to 45
	45 to 52
	52 to 66

Table 2 Percentage 15 to 64 year olds employed

DISTRICT	15 TO 64 YEAR OLDS	FORMALLY EMPLOYED	% FORMALLY EMPLOYED	% 15 TO 64 YEAR OLDS EMPLOYED
Amersfoort	17 498	4 971	57,4	28,4
Balfour	22 530	8 070	66,0	35,8
Barberton	51 286	28 324	73,6	55,2
Belfast	17 139	7 557	68,1	44,1
Bethal	52 967	24 787	69,1	46,8
Carolina	18 386	8 719	69,9	47,4
Delmas	30 559	13 843	66,9	45,3
Eerstehoek	93 163	14 442	44,1	15,5
Ermelo	65 709	27 123	66,5	41,3
Groblersdal	38 249	20 337	72,1	53,2
Hoëveldrif/ Highveld Ridge	111 301	57 653	68,4	51,8
Lydenburg	23 993	11 973	69,7	49,9
Mbibana	34 440	6 939	49,3	20,1
Mdutjana	66 031	10 117	42,1	15,3
Middelburg (M)	92 591	44 544	67,9	48,1
Mkobola	114 876	24 820	48,3	21,6
Moretele	37 458	11 104	50,8	29,6
Moutse	50 780	5 901	33,6	11,6
Nelspruit	42 923	24 655	74,3	57,4
Nkomazi	123 182	15 774	47,4	12,8
Nsikazi	160 413	44 177	63,5	27,5
Piet Retief	39 584	19 768	69,2	49,9
Pelgrimsrust/ Pilgrim's Rest	22 707	14 518	74,7	63,9
Standerton	51 593	21 989	68,4	42,6
Volksrust	18 203	7 149	62,6	39,3
Wakkerstroom	16 137	4 465	56,9	27,7
Waterval-Boven	5 687	2 264	65,6	39,8
Witrivier/ White River	23 553	15 435	73,3	65,5
Witbank	122 846	54 380	65,0	44,3

6.3 Functional literacy

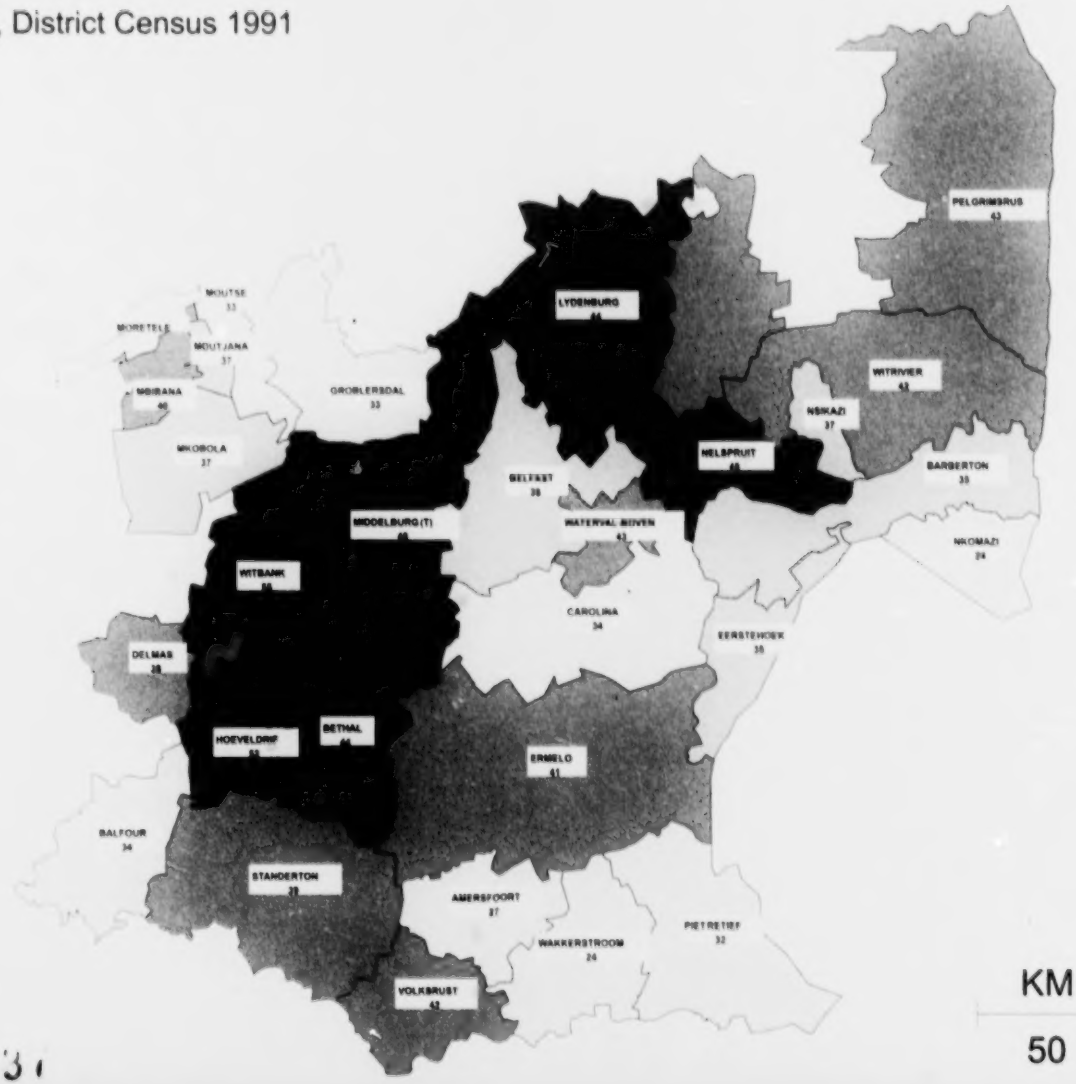
According to the 1991 Census, the more urbanised and industrialised areas had the highest percentages of functional literacy among the population. The highest percentages were found in Witbank (55%), Highveld Ridge (52%), Middelburg and Nelspruit (both 48%). The three worst-off areas were Amersfoort (27%), Wakkerstroom (24%) and Nkomazi (24%). The former KaNgwane areas, namely Nsikazi, Nkomazi and Eerstehoek were the most densely populated. Of these, Nkomazi had the lowest functional literacy (24%). The total picture for the functional literacy of adults is rather grim, with the highest percentage of 55% in Witbank.

J.T. Shube
Department of Education

MAP 3 : PERCENTAGE FUNCTIONAL LITERACY : ADULTS WITH AT LEAST STANDARD 4 EDUCATION

Source : CSS, District Census 1991

HSRC RGN GIS UNIT



KM

50

N

% functional literacy

- 24 to 34
- 34 to 37
- 37 to 43
- 43 to 55
- No data

Table 3 Percentage functional literacy: Adults with at least Standard 4 education

DISTRICT	15 TO 64 YEAR OLDS	% FUNCTIONAL LITERACY
Amersfoort	17 498	27
Balfour	22 530	34
Barberton	51 286	35
Belfast	17 139	36
Bethal	52 967	44
Carolina	18 386	34
Delmas	30 559	38
Eerstehoek	93 163	35
Ermelo	65 709	41
Groblersdal	38 249	33
Hoëveldrif/Highveld Ridge	111 301	52
Lydenburg	23 993	44
Mbibana	34 440	40
Mdutjana	66 031	37
Middelburg (M)	92 591	48
Mkobola	114 876	37
Moutse	50 780	33
Nelspruit	42 923	48
Nkomazi	123 182	24
Nsikazi	160 413	37
Pelgrimsrus/Pilgrim's Rest	22 707	43
Piet Retief	39 584	32
Standerton	51 593	39
Volksrust	18 203	42
Wakkerstroom	16 137	24
Waterval-Boven	5 687	43
Witbank	122 846	55
Witrivier/White River	23 553	42

6.4 Poverty gap

Definition

The poverty gap does not measure the number of people in poverty. It is rather a measure of how poor people are. Unlike a headcount ratio, which counts only the number of people below the poverty line, the poverty gap measures how far each individual is below the poverty line. It therefore measures how much money is needed to bring each poor person's income up to the poverty line in a given year. The poverty gaps shown on the map were calculated for a poverty line of R840 per month for a household with two adults and three children in urban areas, and R740 for the same household in rural areas.

Poverty gaps for districts can be misleading as they take no account of the number of people in the district. They can therefore not be used to show that one district is worse off than another on average. Commonly districts with large populations have high poverty gaps. This does not mean that the people in such a district are particularly poor. It might just mean that there are many people in the district who are all slightly below the poverty line. A district with a smaller population might have a lower poverty gap, but each individual might be much further below the poverty line. For this reason, the figures on the map are supplemented by per capita poverty gaps. These are calculated by dividing the annual poverty gap by the number of people in a district (Erasmus: DBSA).

Data sources

The figures used in the calculation of the poverty gaps were drawn from the 1993 Living Standards and Development Survey (LSDS). This survey was funded in part by the World Bank and was conducted by the Southern African Labour and Development Research Unit (SALDRU) at the University of Cape Town. This survey was relatively small, covering around 9 000 households, and its provincial coverage was not uniform. In its 1995 publication *A profile of poverty, inequality and human development* (Whiteford, Posel & Kelatwang) the Human Sciences Research Council (HSRC) used the LSDS as a basis for its calculation of the poverty gap for each of the former TBVC states as well as for the remaining parts of the nine provinces. In the latter areas the total poverty gap was distributed according to the structure of the poverty gap in the 1991 Census. However the former TBVC states were not covered by the 1991 Census and were inadequately covered by the LSDS, therefore a poverty index based on population and estimated income was used to determine the structure of the poverty gap in the districts of the former TBVC states. The methods of the HSRC were understandably complex given the paucity of data. Still, the resulting figures should be interpreted with caution on a magisterial district level as they can provide only a broad overview of the general situation. The population figures used in the calculation of the poverty gap per capita are straightforward projections from the 1991 Census.

Patterns of poverty

As noted, Mpumalanga has a dualistic socio-economic character. It consists of a section of the former Transvaal province as well as two former homelands, KaNgwane and KwaNdebele. All socio-economic indicators show that the formerly white Transvaal portion of the province is better off than the former homelands that functioned as dormitory areas for the Transvaal towns and the Witwatersrand.

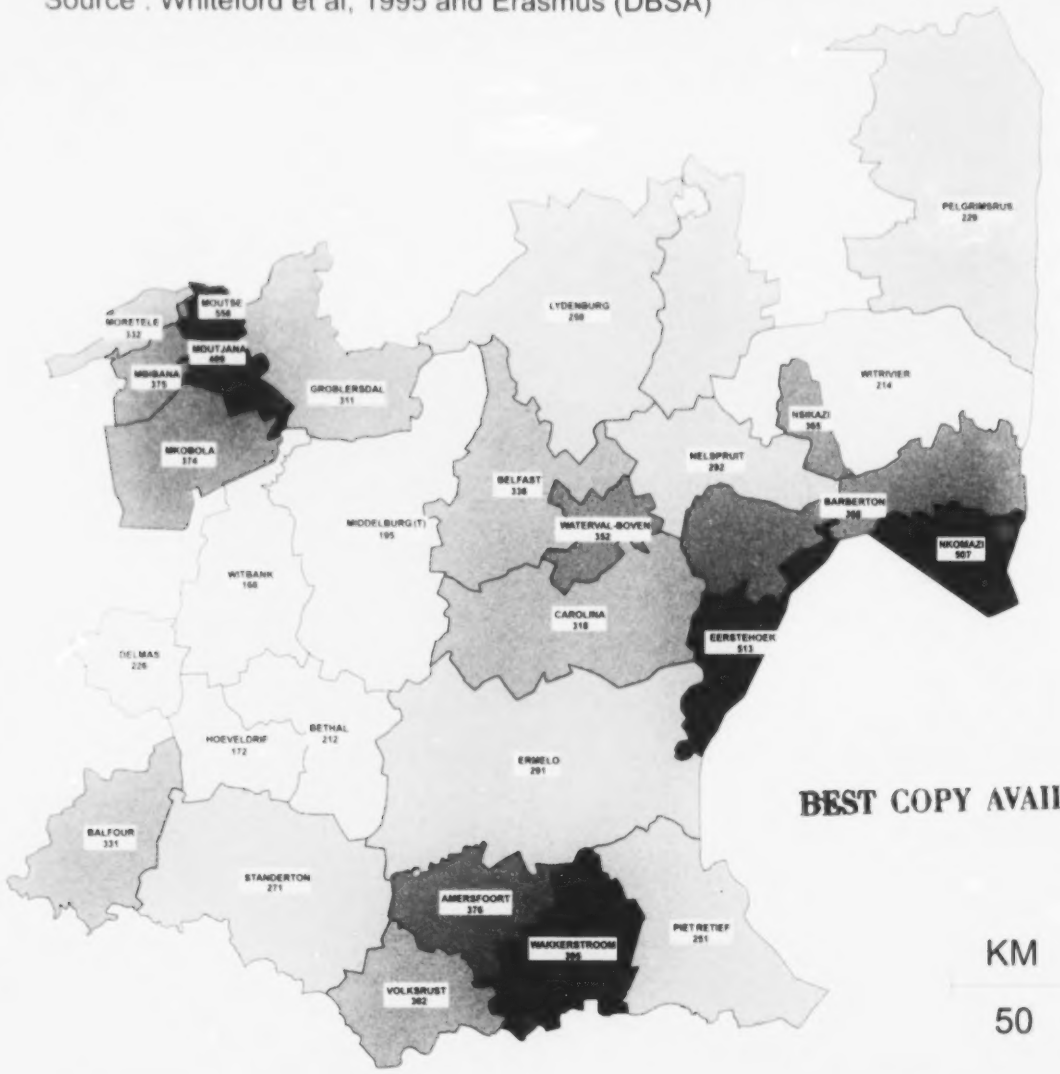
According to the data used, the lowest poverty gaps were found in the industrial core of the province, namely the Witbank and Highveld Ridge districts. Here the per capita poverty gaps were as low as R168 and R172 per year respectively. In the other former white districts of the province per capita poverty gaps ranged from R212 to R395 per year, the highest being in Wakkerstroom with a per capita poverty gap of R395 per person per year. However, its annual total poverty gap in the former Transvaal districts was only R14 million. The fourth highest per capita poverty gap in the former Transvaal districts was found in Waterval-Boven, but its annual total poverty gap was the lowest of all districts at R3,5 million. Spatially, poverty in the former Transvaal portion seemed to be concentrated in the southern-most districts of Mpumalanga.

In the former homelands the poverty gaps were notably higher. The former KaNgwane, Eerstehoek and Nkomazi had per capita poverty gaps in excess of R500 per year. Nsikazi, which borders Nelspruit and White River, had a relatively lower albeit still high poverty gap of R365 per person per year. KwaNdebele, which is closer to the Gauteng province, had poverty gaps of between R374 and R409 per person per year, while Moutse, which borders Groblersdal, had a poverty gap of R558. This was the highest per capita poverty gap in the province.

J. Erasmus
Centre for Policy and Information
Development Bank of Southern Africa

MAP 4 : POVERTY GAP PER CAPITA

Source : Whiteford et al, 1995 and Erasmus (DBSA)



N

KM

50

Poverty gap (R's)

168	to	226
226	to	292
292	to	336
336	to	376
376	to	558

BEST COPY AVAILABLE

HSRC RGN

Table 4 Poverty gap

DISTRICT	TOTAL POPULATION (1993)	POVERTY GAP (R1000)	PER CAPITA POVERTY GAP (R)
Amersfoort	35 886	13 503	376
Balfour	41 081	13 607	331
Barberton	77 380	28 466	368
Belfast	31 080	10 437	336
Bethal	83 414	17 715	212
Carolina	32 642	10 375	318
Delmas	52 132	11 805	226
Eerstehoek	206 063	105 718	513
Ermelo	119 140	34 653	291
Groblersdal	61 930	19 250	311
Hoëveldrif/High-veld Ridge	167 179	28 748	172
Lydenburg	39 665	9 917	250
Mbibana	70 777	26 506	375
Mdutjana	134 600	55 051	409
Middelburg (M)	150 172	29 330	195
Mkobola	228 212	85 241	374
Moretele	83 038	27 559	332
Moutse	109 594	61 114	558
Nelspruit	66 401	19 416	292
Nkomazi	297 091	150 635	507
Nsikazi	332 674	121 362	365
Pelgrimsrus/ Pelgrim's Rest	31 164	7 150	229
Piet Retief	68 704	17 232	251
Standerton	92 130	24 947	271
Volksrust	32 089	9 686	302
Wakkerstroom	35 661	14 082	395
Waterval-Boven	9 976	3 508	352
Witbank	185 837	31 300	168
Witrivier/White River	32 416	6 934	214

6.5 Dependency ratio

Definition

The dependency ratio measures how many people each economically active person has to support, in addition to him or herself. It is calculated by dividing the number of economically active people by the rest of the population. The latter group includes children, aged people, students, housewives and other people who may not want to be employed. It does not, however, include the unemployed, that is those who want to be employed but cannot find employment. People who are unemployed or who have small businesses in the informal sector are defined as being part of the economically active population. Therefore, the economically active population consists of the employed (people in formal paid employment), those in the informal sector and the unemployed. People who are unemployed per definition cannot support their families and people who are in the informal sector also probably do not earn enough to support other family members. Therefore the dependency ratio understates the true extent of dependency.

Data sources

The figures used in the calculation of the dependency ratios were drawn from the 1991 Population Census of the Central Statistical Service. This census is the most recent source of information regarding economic activity on a district level. The 1991 Census has come under scrutiny owing to an apparent undercount of the population. The undercount was more severe in informal settlements in metropolitan areas and in the semi-urban settlements in deep rural areas. Therefore, data for the small and medium-sized towns found in Mpumalanga seem reasonably accurate, but figures for the former homelands may be too low.

Patterns of dependency

Mpumalanga consists of a section of the former Transvaal province, as well as two former homelands, KaNgwane and KwaNdebele. All socio-economic indicators show that the former Transvaal portion of the province is better off than the two former homelands. The homelands functioned as dormitory areas for both the Eastern Transvaal and the Witwatersrand with the result that workers left these areas in search of employment while members of the extended family remained behind. Hence at the time of the census there were relatively few workers in the rural areas, and the number of non-working people was rather high. This resulted in high dependency ratios in the homelands and lower ratios in the former white portions of the province.

These facts are borne out by the figures in the map. The former white districts all have dependency ratios of 3,2:1 or lower. Some of these districts even have dependency ratios as low as 0,4:1. The districts with the dependency ratios below 1,1:1 are the economic heartland of the province. They include the industrial centre, Witbank, the capital, Nelspruit, and the agricultural and forestry areas to the east. Owing to the extensive nature of agriculture and forestry, these areas also have relatively small populations. The effects of the migrant labour system are still visible here: workers from the former KaNgwane left their families

behind in their search for employment. In the 1991 Census they were counted as part of the supporting population of the districts where they worked, but many did not support any people in that district at all, choosing rather to remit at least part of their income to their families in rural areas. Thus they artificially improved the dependency ratios of the districts where they worked. It is also true that at least some of the migrants may have had second families in the towns. However, this is more likely when the migrants live far from home, such as in another province, and the practice is less common in areas where the towns are closer to the rural areas.

In the former homelands dependency ratios range from around three additional people to over seven additional people to be supported by each economically active person. The lower dependency ratios are mainly found in the southern part of the former KwaNdebele, which is closest to the Reef, and the Nsikazi district of the former KaNgwane, which borders Nelspruit and White River. The highest rate is that of Nkomazi, a small enclave bordered by Swaziland and Mozambique.

If one bears in mind that the dependency ratios include the unemployed and informal sector workers in the supporting rather than the dependent population, then even these relatively high figures still understate the extent of the problem. Unemployment rates are above 30% in most of these districts. For example, in the district of Nkomazi, around a third of the economically active population cannot find formal paid employment or informal sector work. In the same district, another 19% of the economically active population is engaged in informal sector activities that normally generate little income. The dependency ratio in Nkomazi is already 7,3:1. If it is assumed that the unemployed and informal sector workers cannot afford to support their families, the adjusted dependency ratio is as high as 16,6:1. This shows that 15 774 working people have, for all practical purposes, to support 276 965 people in addition to themselves. The problem is alleviated to some extent by the remittances received from migrant workers. However, these remittances are often not enough for the extended family to subsist on.

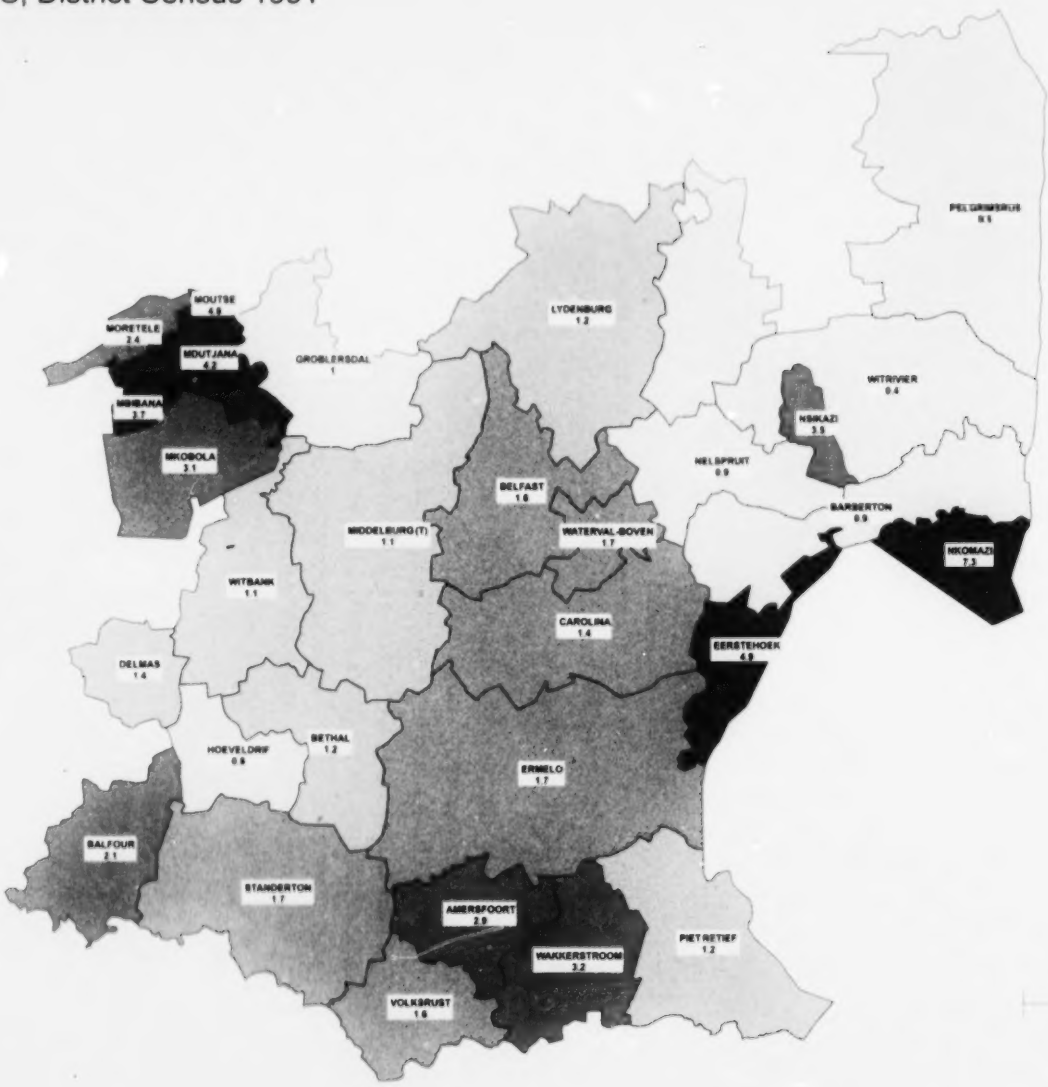
This is not the only problem faced by people in deep rural areas. Formal employment in the former homelands was mainly in government activities, which are being scaled down. Thus employment opportunities within the deep rural areas are likely to decrease even further and many people who were shown to be employed in the 1991 Census are likely to have lost their source of income in the meantime. This change in the employment/unemployment position will not be reflected in the dependency ratios, but is a crucial factor determining the extent of human suffering in the province.

J. Erasmus
Centre for Policy and Information
Development Bank of Southern Africa

MAP 5 : DEPENDENCY RATIO

Source : CSS, District Census 1991

HSRC
RGN
GIS UNIT



N

KM

50

Dependency ratio

	.4 to 1,0
	1,0 to 1,3
	1,3 to 1,7
	1,7 to 3,4
	3,4 to 7,3

Table 5 Dependency ratio

DISTRICT	TOTAL POPULATION	ECONOMICALLY ACTIVE POPULATION	DEPENDENCY RATIO
Amersfoort	33 461	8 665	2,86
Balfour	38 311	12 229	2,13
Barberton	72 165	38 460	0,88
Belfast	28 973	11 089	1,61
Bethal	77 780	35 876	1,17
Carolina	30 438	12 469	1,44
Delmas	48 614	20 680	1,35
Eerstehoek	192 115	32 750	4,87
Ermelo	111 082	40 810	1,72
Groblersdal	57 742	28 191	1,05
Hoëveldrif/Highveld Ridge	155 881	84 294	0,85
Lydenburg	36 976	17 180	1,15
Mbibana	65 989	14 067	3,69
Mdutjana	125 485	24 039	4,22
Middelburg (M)	140 015	65 584	1,13
Mkobola	212 771	51 362	3,14
Moutse	102 179	17 562	4,82
Nelspruit	61 921	33 174	0,87
Nkomazi	276 965	33 280	7,32
Nsikazi	310 160	69 553	3,46
Pelgrimsrus/Pilgrim's Rest	29 063	19 444	0,49
Piet Retief	64 052	28 556	1,24
Standerton	85 893	32 171	1,67
Volksrust	29 924	11 414	1,62
Wakkerstroom	33 246	7 846	3,24
Waterval-Boven	9 300	3 451	1,69
Witbank	173 281	83 601	1,07
Witrivier/White River	30 235	21 056	0,44

6.6 Population density

Density patterns follow very much the trend of the total population data. Twenty nine per cent of Mpumalanga's districts have a population density below the South African average of 33,3 persons per km^2, thus confirming the tendency towards sparse distribution. Interpretation of the data reinforces the vast contrast between the areas that fell into the former black homelands with their associated problem of population pressure and the less heavily populated former Transvaal areas. It also shows large concentrations of people in the limited number of main towns that lie in areas of sparser settlement.

Table 6a **Number of persons per km^2 per magisterial district**

Persons per km^2	*f* (Magisterial districts)
< 250	2
201 - 250	2
151 - 200	2
101 - 150	3
50 - 100	1
> 50	20

The map shows that, apart from Eerstehoek (in the former KaNgwane) and Highveld Ridge (mining and manufacturing focus), the Eastveld has the lowest density pattern with two-thirds of its districts having a population density of below 20 persons per km^2. The Lowveld has high population densities of over 150 persons per km^2 in four black homeland areas with Nelspruit being an urban concentration. The districts with the three lowest densities (under 7 persons per km^2) span the entire northern Lowveld. A similar pattern prevails in the Highveld with Witbank having a large concentration of people in the main town surrounded by an area of sparse population and four other districts with a dense black population of over 30 persons per km^2. The remaining 50% of the Highveld's districts are spread in the lower density categories.

The above table highlights not only the uneven population distribution pattern, but also the large areas of sparse settlement and the few, small areas with dense concentrations of people.

Concluding comment

Erasmus's (1993) recommendation that poverty alleviation should take the form of improved economic growth coupled with job creation, the encouraging of entrepreneurial skills and removing of obstacles to participation in the informal economy seems relevant to Mpumalanga's plight. An anomaly exists between the urban and the rural areas with pockets of poverty showing that the greatest need will be to address education and health issues, to strengthen survival strategies and to provide social security for the destitute and needy.

To interpret population dynamics requires reference not only to the population's size and growth, but also to density and distribution, all dynamic factors influenced by change in environmental, socio-cultural, political and economic spheres. When one is identifying service needs and provision, the analysis should

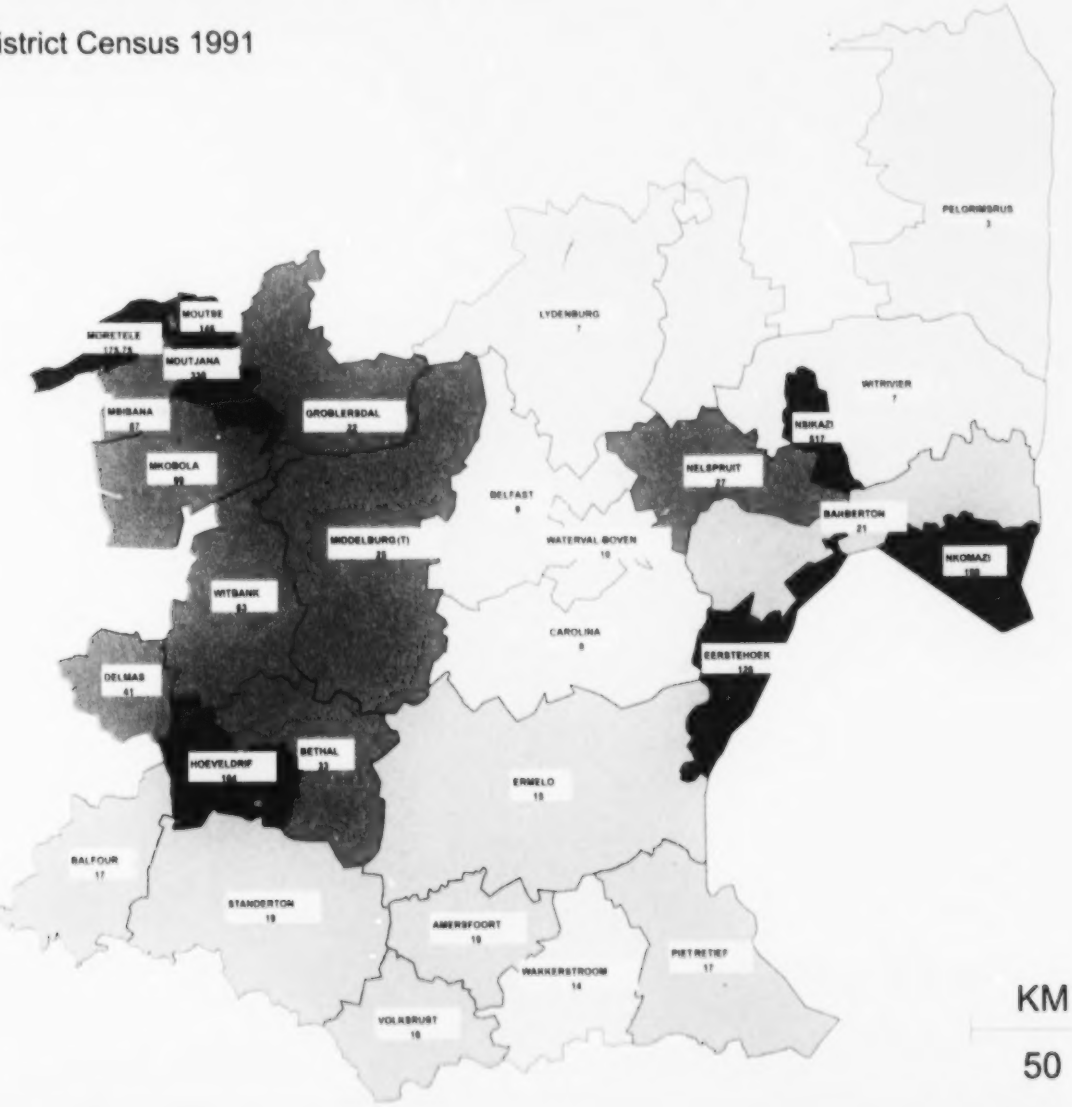
focus the locality, the living conditions and the prevailing human and natural resource base of the people. Neither the past, nor the present can be overlooked when planning for the future, especially within the ethos of sustainable living in a sustainable environment.

J. Fairhurst
University of Pretoria

MAP 6 : POPULATION DENSITY

Source : CSS, District Census 1991

HSRC RGN GIS UNIT



52

53

Table 6 Population density

DISTRICT	TOTAL POPULATION	AREA	POPULATION DENSITY
Amersfoort	33 461	1 805	19
Balfour	38 311	2 237	17
Barberton	72 165	3 385	21
Belfast	28 973	3 085	9
Bethal	77 780	2 357	33
Carolina	30 438	3 858	8
Delmas	48 614	1 175	41
Eerstehoek	192 115	1 523	126
Ermelo	111 082	7 328	15
Groblersdal	57 742	2 655	22
Hoëveldrif/Highveld Ridge	155 881	1 493	104
Lydenburg	36 976	5 229	7
Mbibana	65 989	755	87
Mdutjana	125 485	371	338
Middelburg (M)	140 015	5 695	25
Mkobola	212 771	2 147	99
Moutse	102 179	699	146
Nelspruit	61 921	2 267	27
Nkomazi	276 965	1 393	199
Nsikazi	310 160	600	517
Pelgrimsrus/ Pelgrim's Rest	29 063	9 452	3
Piet Retief	64 052	3 734	17
Standerton	85 893	4 633	19
Volksrust	29 924	1 875	16
Wakkerstroom	33 246	2 323	14
Waterval-Boven	9 300	965	10
Witbank	173 281	2 753	63
Witrivier/White River	30 235	4 393	7

6.7 Index of Need

As outlined in Section 4.2, high index scores are indicators of underdevelopment. The social variables selected to develop the Needs Index were the poverty gap, pupil:teacher ratio, dependency ratio, total households, and population density. A district not requiring development intervention based on this Social Needs Index would have a low index score and the following social profile: a low poverty gap, low pupil:teacher ratio, low dependency ratio, low population densities and a high number of households. Conversely an underdeveloped district would have a high poverty gap, high pupil:teacher ratio, high dependency ratio, high population densities and a low number of households.

The Index of Need map (Map 7) indicates that all of the former Bophutatswana, KaNgwane and KwaNdebele districts fall in the two ranges that are the most underdeveloped. Of the former white Transvaal districts only three, Groblersdal, Amersfoort and Wakkerstroom, are socio-economically underdeveloped.

In the former white Transvaal districts there is, in general, a decline in socio-economic development from the north to the south. The range of Index of Need scores for the former white districts is broad, from a well developed 19 to an underdeveloped 56. The former black administered areas have a much narrower range of Index of Need scores, from 60 to 77. These can all can be considered underdeveloped.

The former KaNgwane districts in the east are much less developed socio-economically than their former white neighbours. Nsikazi, for example, has an Index of Need score 52 points higher than White River. The former KwaNdebele and Bophuthatswana districts in the north-west are also less developed than their former white neighbours. In the north-west the differences in Index of Need scores between former black and white areas ranges from 4 to 35 points.

MAP 7 : INDEX OF NEED

Table 7 Index of Need

DISTRICT	SOCIAL INDEX
Moutse	77
Nkomazi	75
Mbibana	72
Mdutjana	72
Eerstehoek	72
Nsikazi	71
Mkobola	65
Amersfoort	64
Moretele	60
Wakkerstroom	58
Groblersdal	56
Piet Retief	53
Balfour	50
Delmas	49
Waterval-Boven	49
Standerton	48
Bethal	47
Volksrust	46
Carolina	46
Belfast	46
Ermelo	45
Hoëveldrif/Highveld Ridge	42
Witbank	42
Middelburg (M)	41
Barberton	38
Nelspruit	37
Lydenburg	32
Pelgrimsrus/Pilgrim's Rest	24
Witrivier/White River	19

7

PROVISION OF SERVICES IN MPUMALANGA

7.1 Education

This document was abridged from Education White Paper 2 - The Organisation, Governance and Funding of Schools 1996.

Introduction

"South Africa's pattern of school organisation, governance and funding, which is a legacy of the apartheid system, must be transformed in accordance with democratic values and practice, and the requirements of the Constitution" (Education White Paper 2, 1996:1). The constitution establishes a democratic national, provincial and local government order. All governments and public schools are to observe fundamental rights and protect fundamental freedoms, many of which have direct implications for decisions made by school governors and managements. The constitution also obliges governments to negotiate with school governing bodies before changing their rights, powers and functions. They are also to fund all public schools on an equitable basis in order to achieve an acceptable level of education.

The White Paper "Education and Training in a Democratic South Africa: First Steps to Develop a New System", approved by the cabinet in February 1995, described the process of investigation and consultation that would be followed by the Ministry of Education in order to bring a new pattern of school organisation into existence. For this purpose, a representative review committee was announced. "The Review Committee's brief was to recommend to the Minister of Education a proposed national framework of school organisation and ownership, and norms and standards of school governance and funding which, in the view of the committee, are likely to command the widest possible public support, accord with the requirements of the Constitution, improve the quality and effectiveness of schools, and be financially sustainable from public funds" (Education White Paper 2, 1996:1).

Principles underlying a new framework

"The new structure of school organisation should create the conditions for developing a coherent, integrated, flexible national system which advances redress, the equitable use of public resources, an improvement in educational quality across the system, democratic governance, and school-based decision making within provincial guidelines. The new structure must be brought about through a well-managed process of negotiated change, based on the understanding that each public school should embody a partnership between the provincial education authorities and a local community. The new structure of the school system must address the inheritance of inequality and ensure an equitable,

efficient, qualitatively sound and financially sustainable system for all its learners" (Education White Paper 2, 1996:5).

"The huge disparities among South African schools require a new structure of school organisation – a system of governance which will be workable as well as transformative. Both organisational structure and governance must be adequately uniform and coherent, but flexible enough to take into account the wide range of school contexts, the significant contrasts in the material conditions of South African schools, the availability or absence of management skills, parents experience or inexperience in school governance, and the physical distance of many parents from their children's schools. The South African population has a right to expect that a redesigned school system for a democratic South Africa will be manifestly new, more equitable, and empowering to all who have a direct stake in the success of schooling" (Education White Paper 2, 1996:6).

As a guide to negotiated change in the school system, the Ministry of Education therefore proposes that the new structure of school organisation, governance and funding must aim to

- "ensure both national coherence and the promotion of a sense of national common purpose in the public school system, while retaining flexibility and protecting diversity;
- enable a disciplined and purposeful school environment to be established, dedicated to a visible and measurable improvement in the quality of the learning process and learning outcomes throughout the system;
- enable representatives of the main stakeholders of the school to take responsibility for school governance, within a framework of regulation and support by the provincial education authorities;
- ensure that the involvement of government authorities in school governance is at the minimum required for legal accountability, and is based on participative management;
- enable school governing bodies to determine the mission and character or ethos of their schools, within the framework of Constitutional provisions affecting schools, and national and provincial school law;
- ensure that the decision-making authority assigned to school governing bodies is coupled with the allocation of an equitable share of public (budgetary) resources, and the right to raise additional resources, for them to manage;
- recognise that a governing body's right of decision making is not linked to the ability of its community to raise resources;
- ensure both equity and redress in funding from public (budgetary) resources, in order to achieve a fair distribution of public funds and the elimination of backlogs caused by past unequal treatment;
- improve efficiency in school education through the optimum use of public financial (budgetary) allocations, and publicly-funded staff resources" (Education White Paper 2, 1996:6).

Application of the principles underlying the ministry's approach to school organisation, governance and funding will be a very complex matter. This is

because any solution to the inheritance of injustice in the schools will be difficult to apply and will take time to work through the system. "Therefore, it is all the more important that policy goals be clearly stated on the basis of defensible principles, so that they may properly guide the practical decisions that will be required in the course of drawing up legislation, in the process of negotiation with school governing bodies and teachers' organisations, and in the development of administrative arrangements to implement the new system" (Education White Paper 2, 1996:6).

Organisation of schools

The policy of the Ministry of Education is that there shall be just two broad categories of schools in future: public schools and independent schools.

Public schools comprise community schools, farm schools, state schools, and state-aided schools (including church schools, Model C schools, mine schools, and others). Collectively, these comprise just over 98% of the country's primary and secondary schools, and almost 99% of school enrolments (Education White Paper 2, 1996).

Public schools will have the following features in common:

- "Each public school will represent a partnership between the provincial education department and the local community.
- Public schools will be funded from public resources, that is, from provincial education department budgets, and with few exceptions their property will be owned by the state.
- The admission policies of public schools will be determined by governing bodies in consultation with provincial education departments, in terms of national norms and provincial regulations, and will uphold constitutionally guaranteed rights and freedoms.
- The mission policy, and character or ethos of each public school will be determined within national and provincial frameworks by a governing body comprising elected representatives of the main stakeholders of the school.
- The salaries of teachers in each public school will be paid by the provincial education department according to a staff provisioning scale, and such teachers will be appointed in each public school by the provincial education department on the recommendation of and in consultation with the school's governing body" (Education White Paper 2, 1996:8).

"Independent schools comprise private or independent schools. Together, these account for not quite 2% of primary and secondary schools, and about 1,2% of enrolments. The Ministry of Education's policy is that schools presently known as private schools will henceforth be known as independent schools. The independent schools sector is very small, but it is important and appears to be growing. Independent schools are privately owned schools that appoint their own teachers. All independent schools should be required by law to register with the provincial education department and to comply with the conditions of registration laid down by the province. Such regulation of independent schools

through a registration process under provincial government law is consistent with international practice" (Education White Paper 2, 1996:9).

Governance in schools

"Governance policy for public schools is based on the core values of democracy. Governing bodies will have substantial decision-making powers, selected from a menu of powers according to their capacity. Teachers in public schools will be employed by the provincial education departments on the recommendation of and in consultation with governing bodies. The intention is that all public schools will be granted a legal personality in recognition of the responsibilities of their governing bodies. Governing bodies in all schools need to make suitable arrangements to meet their responsibilities to learners with special education needs" (Education White Paper 2, 1996:9).

Schools in the independent sector have been established as educational trusts. They must comply with educational laws and regulations and register with provincial education departments. Conditions of registration should include approval of the school constitution, which should include provisions for governance. The ministry will support provincial legislation or other measures to encourage private school owners, directors or trustees to introduce representative governing body or consultative arrangements in their own schools, where they have not already done so.

Financing of schools

"The Review Committee proposed a new financial system for public schools based on a partnership between the government and communities, on the basis that nothing else is affordable under the present conditions. In terms of these proposals, provincial budgets would be restructured to secure fundamental constitutional requirements and policy objectives. School operating costs would be funded partly by subsidy, and partly by income-related school fees which would be obligatory for all parents who could afford them. Poor parents would not pay fees, and no child would be refused admission to school. The same system would apply in the compulsory and post-compulsory phases, with a reduced per capita subsidy in the post-compulsory phase. The system should be reviewed after five years" (Education White Paper 2, 1996:19).

Meanwhile, progress has been made on three important measures relating to school finance.

- "A single learner:educator ratio. A single ratio on which provincial staff provision scales can be based must underlie an equitable school financing system. On 29 September 1995, the Education Labour Relations Council (ELRC) signed an agreement on guideline learner:educator ratios of 40:1 in ordinary primary schools and 35:1 in ordinary secondary schools. These ratios do not stipulate exact class sizes, but provide parameters within which each provincial bargaining chamber will negotiate staff provisioning scales for its schools. This is a major step towards equity in the provision of

educators to all schools. Separate agreements will be negotiated for other institutions including special schools and technical schools.

- An Education Management Information System (EMIS). A steering committee was established by the Department of Education to oversee the development of an EMIS. The committee comprises representatives of the national and provincial departments of education, the organised teaching profession, and a number of NGO and academic research units. By providing information to all ten departments of education, the new EMIS will support budgetary and personnel planning for 1996/97.
- A School Index of Needs. The index is required as a planning tool for departments of education. It will be compiled on the basis of a census of all 29 000 schools in the country, and will supplement the data gathered for the EMIS. The index will enable provincial departments, their regional and district offices, and school communities to make more informed and equitable decisions about financial allocations to schools for expenditure on redress and quality improvement" (Education White Paper 2, 1996:24).

7.1.1 Pupil : teacher ratios

Teachers are one of the most important resources for the provision and delivery of education. Although international research on class size has not yet established an ideal ratio, it is generally accepted that the quality of education suffers when classes become too large. In this discussion a pupil: teacher ratio of 37:1 will be considered as the highest acceptable ratio for quality education to occur.

When one considers pupil:teacher ratios in a magisterial district, it must be kept in mind that individual school ratios may vary considerably, but still display an acceptable average on a magisterial district level. Magisterial district level data are however very useful for indicating general trends and problem areas. The maps shows that in all magisterial districts the pupil:teacher ratio is higher than 37:1, except for the magisterial districts on the eastern side of the province, namely Nelspruit (35:1), White River (33:1) and Barberton (35:1).

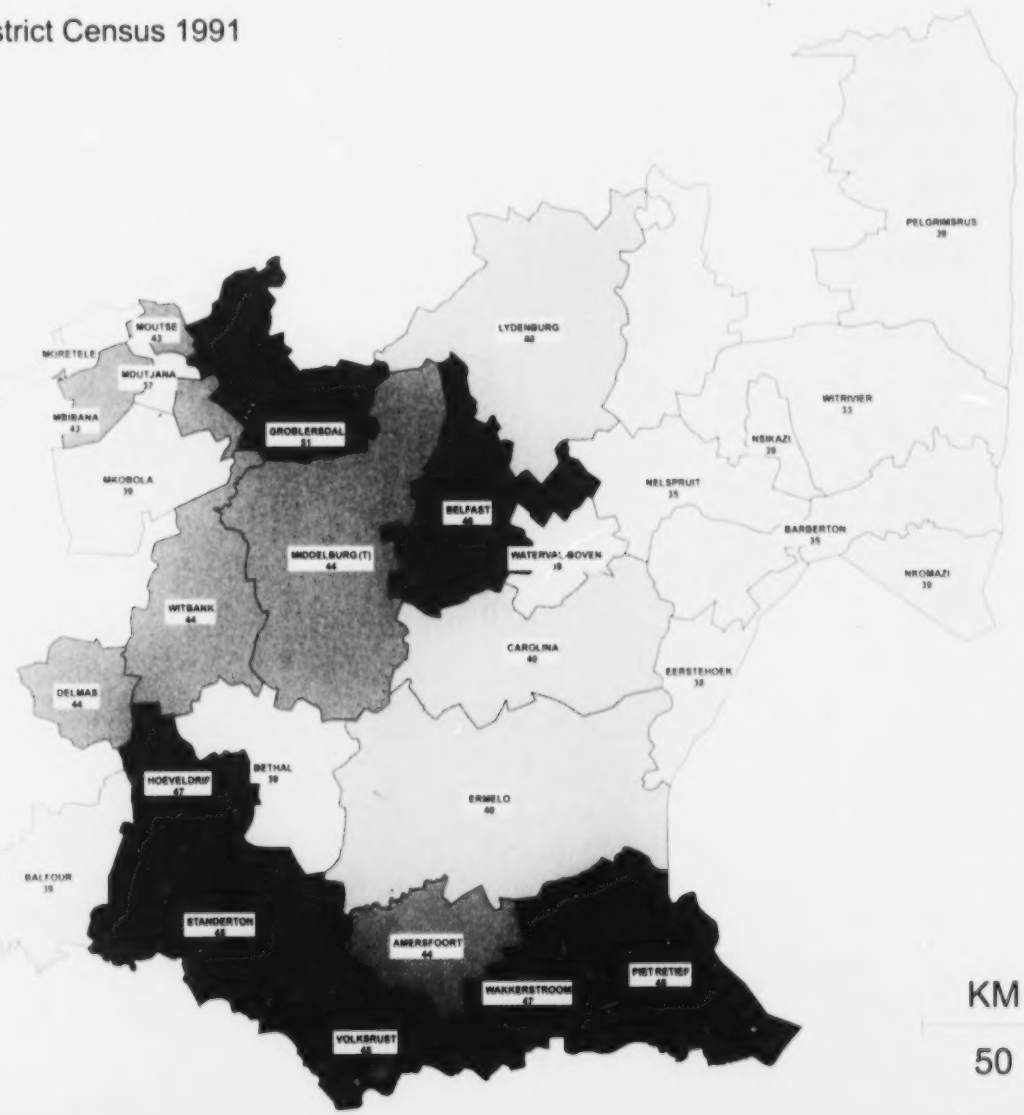
According to the map the highest pupil:teacher ratios are found in the north-west and southerly districts of Mpumalanga. The highest ratio is in Groblersdal (51:1), followed by Highveld Ridge (47:1) and Wakkerstroom (also 47:1). The pupil:teacher ratio in Highveld Ridge is of particular concern since the area has a high number of enrolments (18 860) and is densely populated (105 people per km^2 according to the 1991 Census).

J.T. Shube
Department of Education

MAP 8 : AFRICAN PUPILS PER TEACHER

Source : CSS, District Census 1991

HSRC RGN GIS UNIT



46

00 64

65

Table 8 African pupils per teacher

DISTRICT	TEACHERS	AFRICAN PUPILS	AFRICAN PUPIL:TEACHER RATIO
Amersfoort	211	9 204	44
Balfour	244	9 604	39
Barberton	233	8 106	35
Belfast	153	7 009	46
Bethal	342	13 427	39
Carolina	158	6 383	40
Delmas	202	8 920	44
Eerstehoek	1 805	67 990	38
Ermelo	636	25 233	40
Groblersdal	204	10 498	51
Hoëveldrif/ Highveld Ridge	403	18 860	47
Lydenburg	171	6 831	40
Mbibana	493	21 208	43
Mdutjana	1 327	48 461	37
Middelburg (M)	551	23 976	44
Mkobola	2 054	80 165	39
Moutse	979	41 852	43
Nelspruit	127	4 471	35
Nkomazi	1 956	77 185	39
Nsikazi	2 590	101 641	39
Pelgrimsrus/ Pilgrim's Rest	60	2 355	39
Piet Retief	399	17 927	45
Standerton	435	19 533	45
Volksrust	152	6 824	45
Wakkerstroom	167	7 915	47
Waterval-Boven	72	2 733	38
Witbank	779	33 933	44
Witrivier/White River	20	664	33

7.1.2 Adult literacy

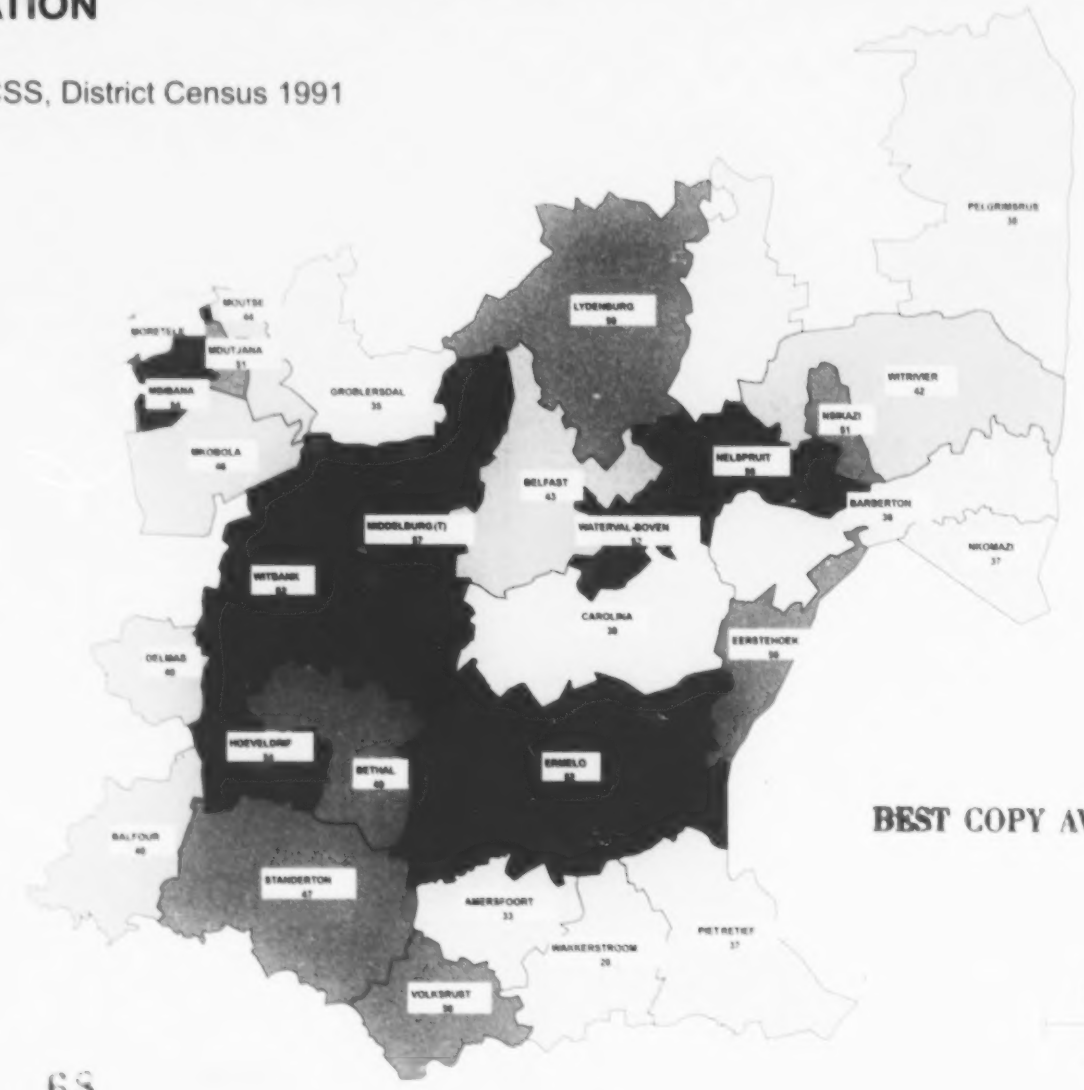
The map shows that the areas with the highest number of adults (defined as 15-64 year olds) have on average the higher percentages of literate adults. The Witbank magisterial district that had the second highest number of adults (122 846) according to the 1991 Census, had 62% (the highest in the province) of its adults literate. In Nsikazi, which had the highest number of adults (160 413), there was a 51% literate adult population. The magisterial districts of Witbank, Middelburg and Nelspruit have significant urban areas, and therefore have higher percentages of literate people (62%, 57% and 56% respectively). The magisterial districts of Groblersdal, Amersfoort and Wakkerstroom had the lowest percentages of literate adults (35%, 33% and 28% respectively).

J.T. Shube
Department of Education

MAP 9 : PERCENTAGE ADULTS BETWEEN 15 AND 64 YEARS WITH STANDARD 6 OR HIGHER EDUCATION

Source : CSS, District Census 1991

HSRC
RGN



N

% adults

- 28 to 38
- 38 to 46
- 46 to 51
- 51 to 62
- No data

KM

50

BEST COPY AVAILABLE

Table 9 Percentage adults between 15 and 64 years with Standard 6 or higher education

DISTRICT	TOTAL ADULTS (15 - 64 YRS)	ADULTS (15 - 64 YRS) WITH SECONDARY ED.	ADULTS (15 - 64 YRS) WITH TERTIARY ED.	% ADULTS (15 - 64 YRS) WITH STD 6 OR HIGHER ED.
Amersfoort	17 498	5 509	282	33
Balfour	22 530	8 411	550	40
Barberton	51 286	16 585	1 750	36
Belfast	17 139	6 716	578	43
Bethal	52 967	23 820	1 939	49
Carolina	18 386	6 497	557	38
Delmas	30 559	11 197	1 157	40
Eerstehoek	93 163	45 096	1 867	50
Ermelo	65 709	31 138	2 725	52
Groblersdal	38 249	12 041	1 488	35
Hoëveldrif/ Highveld Ridge	111 301	54 258	5 767	54
Lydenburg	23 993	10 976	1 073	50
Mbibana	34 440	18 171	478	54
Mdutjana	66 031	32 472	979	51
Middelburg (M)	92 591	47 881	5 339	57
Mkobola	114 876	51 526	1 659	46
Moutse	50 780	21 704	798	44
Nelspruit	42 923	20 040	4 177	56
Nkomazi	123 182	43 323	1 903	37
Nsikazi	160 413	78 747	3 379	51
Pelgrimsrus/ Pilgrim's Rest	22 707	7 454	1 117	38
Piet Retief	39 584	13 170	1 311	37
Standerton	51 593	22 256	2 174	47
Volksrust	18 203	8 347	699	50
Wakkerstroom	16 137	4 238	234	28
Waterval-Boven	5 687	2 785	176	52
Witbank	122 846	69 829	6 314	62
Witrivier/White River	23 553	7 946	1 907	42

7.1.3 Pre-school education

Introduction

"It is universally recognisable that the first six years of life are of vital importance in the development of the young child. However, reality tells us that the provision of services to our youngest children is in neglect and programme quality is often poor. One result of this is the disturbing data concerning failure and drop out rates for primary school children and the resultant numbers of children leaving school prior to achieving functional literacy. Arguments for early childhood development (ECD) intervention programmes are strong and the effects of existing programmes provide evidence for expansion of a range of affordable services. The lack of financial resources, and an unwillingness by the previous government to take responsibility for ECD services are the major causes of the very limited overall access resulting in provision for fewer than 11% of under-fives. Funding for ECD must occur within the framework of a comprehensive national strategy for reconstruction and development and has to address needs and inequality, with emphasis on the principles of redress, equity and quality service rendering. Modest state support would enable programmes to offer adequate quality services. The question to be considered is not *"Can we afford to provide services for our youngest children?" but "Can we afford not to provide essential early childhood development services for our youngest children?"* (Atmore, 1996:Abstract).

Pre-school education

Mpumalanga province is a predominantly farming region with a number of "farm towns" and dwelling areas referred to as urban, semi-urban and rural. A higher percentage of dwelling areas are of the rural and farming type where people are poor and illiterate, and basic needs are scarce, or not available.

Rural versus urban areas

In rural areas, services such as early childhood development (ECD) are in great demand, but reaching these areas is a problem: bad roads, long distances and the people's attitudes as influenced by culture and poverty exacerbate the situation.

These areas are serviced mainly by the staff of a few NGOs making it difficult for them to cover the whole area. Funding is also needed. Unfortunately the services by these organisations sometimes overlap.

In urban areas, such services are demanded and used by the communities, with parents being prepared to pay for the same. However, in the semi-urban areas, the demand for ECD depends on the level of education, exposure and extent of community development. Therefore the level of acceptance and demand for the services varies in these regions.

At present, the organisations rendering ECD services are trying to co-ordinate their efforts and the areas in which they operate. This will facilitate an orderly distribution of services to all areas and sharing of information. These organisations as well as the Department of Health and Welfare are giving special attention to the refugees in these areas.

Approach towards early childhood development (ECD) service

A few NGOs offer early childhood development services in this province. The following are a few of the methods used to promote their services:

Community awareness of ECD is fostered by

- holding meetings with chiefs and indunas to highlight the importance of ECD;
- getting permission from the above to hold meetings with the women of the community;
- encouraging the opening of day-care centres;
- motivating parents to support such centres by making use of them (sending children) and helping in their maintenance;
- training the care givers, regardless of their level of education, in ECD programmes.

Issues of relevance in meeting future needs

- The government must not only be aware of what the NGOs are doing, but must support these organisations through tenders or funding, must promote their recognition by the community and regularly evaluate their functioning.
- The overlapping of services must be avoided.
- Competition must be avoided. Everyone should feel that he is working for a child, hence for a better future for all.
- The government must involve all departments and organisations that can help improve the environment of the child (for example, Department of Environment Affairs, Department of Works, Health, Education, Water, etc).

Guidelines for strategies

- Each community should develop such services using its available resources.
- The government should support the ECD NGOs and help them to be sustainable through tendering and subsidisation.
- The government should encourage the RDP to assist in establishing such service.
- NGO certificates for child care or community work should be accredited to foster recognition of such training and work. This will motivate the workers, trainees and students and enhance their status.
- Since the government service does not reach the deep rural areas as the NGOs do, the government should use these organisations as an extension of its own capacity and help them to remain so.
- Job creation projects and job training courses must be developed.

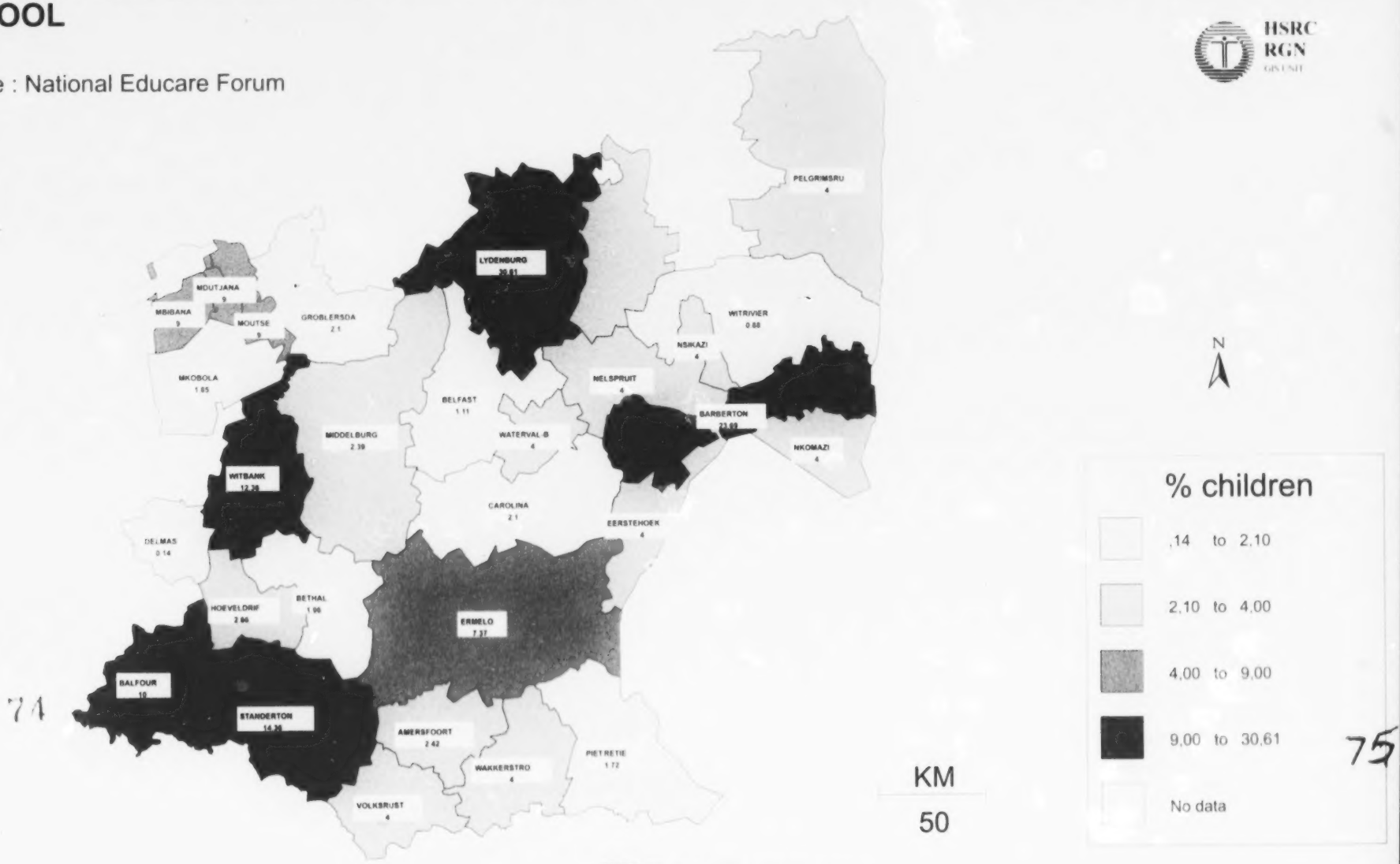
Since the NGOs frequently hold meetings during the year, much information can be obtained from their discussions. Observations by NGO workers as they visit the areas on a regular basis has been helpful.

T. Khoza
Masibambane Early Learning Centre

MAP 10 : PERCENTAGE CHILDREN YOUNGER THAN 6 YEARS IN EDUCARE OR PRE-PRIMARY SCHOOL

Source : National Educare Forum

HSRC RGN GIS UNIT



BEST COPY AVAILABLE

Table 10 Percentage children younger than 6 years in educare or pre-primary school

DISTRICT	EDUCARE CENTRES	CHILDREN (0-5) AT CENTRES	TOTAL AGED 0 - 5	% TOTAL CHILDREN AT CENTRES
Amersfoort	1	150	6 200	2,4
Balfour	regional average	regional average	5 800	10,0
Barberton	116	2 061	8 700	23,7
Belfast	3	50	4 500	1,1
Bethal	1	180	9 200	2,0
Carolina	1	101	4 800	2,1
Delmas	1	10	6 900	0,0
Eerstehoek	regional average	regional average	40 500	4,0
Ermelo	24	1 319	17 900	7,4
Groblersdal	4	162	7 700	2,1
Hoëveldrif/ Highveld Ridge	6	502	18 900	2,7
Lydenburg	19	1 500	4 900	30,6
Mbibana	regional average	regional average	12 400	9,0
Mdutjana	regional average	regional average	23 500	9,0
Middelburg (M)	21	427	17 900	2,4
Mkobola	16	718	38 800	1,9
Moutse	regional average	regional average	19 400	9,0
Nelspruit	126	5 460	7 300	4,0
Nkomazi	regional average	regional average	67 000	4,0
Nsikazi	regional average	regional average	62 200	4,0
Pelgrimsrus/ Pilgrim's Rest	regional average	regional average	2 500	4,0
Piet Retief	2	172	10 000	1,7
Standerton	52	1 881	13 100	14,4
Volksrust	regional average	regional average	4 300	4,0
Wakkerstroom	regional average	regional average	6 500	4,0
Waterval-Boven	regional average	regional average	1 400	4,0
Witbank	39	2 373	19 200	12,4
Witrivier/White River	1	23	2 600	0,0

7.2 Health

Introduction

The sections dealing with problems and challenges, restructuring, policy framework, principles, and district health system are abridged from the policy document "Restructuring the National Health System for Universal Primary Health Care, 1996".

"Health care delivery in South Africa faces a number of acute problems and challenges, many of which are related to the utilisation and distribution of financial and other resources. Approximately R30 billion was spent on health care in South Africa in 1992/93. This is equivalent to 8,5 % of gross domestic product (GDP), or one-twelfth of the economy. South Africa is thus devoting substantially more resources to the health sector than most developing countries, yet has poor health status relative to these countries" (Restructuring the National Health System for Universal Primary Health Care, 1996:1).

Problems and challenges confronting the public health sector

One of the most pressing problems facing public health services is the relatively heavy concentration of resources in the hospital sector, and consequent underresourcing of primary health care services. "Approximately 76% of total public sector health care expenditure was attributable to acute hospitals in 1992/93, with academic and other tertiary hospitals alone accounting for 44%. In contrast, 11% was spent on non-hospital primary care services. While certain hospitals provide quite substantial primary care services (e.g. deliveries, and ambulatory care at community hospital outpatient departments), it is clear that a redistribution of resources between levels of care is required if the government is to significantly improve access to community-based primary care services for those who currently do not have such access" (Restructuring the National Health System for Universal Primary Health Care, 1996:2).

The effectiveness of public sector health services is also undermined by the historical geographic maldistribution of resources that are the legacy of the apartheid health care system. An explicit process of resource reallocation between the nine provinces has been implemented with effect from the 1995/96 financial year. "The stated goal is to achieve per capita equity in provincial health care allocations, with an allowance for provinces with academic complexes, within five years. While attention is usually focused on the distribution of resources between provinces, recent data have highlighted significant intra-provincial disparities in public sector resource allocation. These indicate that the public sector in the richest magisterial districts employs 4,5 times more general doctors, 2,4 times more registered nurses, and 6,1 times more health inspectors than in the poorest districts, and that average public expenditure per person on health services in the richest districts is 3,6 times more than in the poorest districts" (Restructuring the National Health System for Universal Primary Health Care, 1996:3).

The inequitable and inefficient distribution of public sector health care resources described here has contributed to inadequate public health sector performance over the last several decades. This is manifest in extremely poor health indicators, including high rates of avoidable morbidity, disability and mortality among the poor and disadvantaged communities, particularly in rural or urban underserved areas. These problems will be significantly addressed through improvements in quality and accessibility of the public primary health care delivery system.

In summary, the public sector faces the challenge of attempting to improve access to basic primary care services for those who currently do not have access to such care. At the same time it is also trying to redress historical inequities in the distribution of health care resources between and within provinces. This must be achieved within the constraints of a limited budget that is currently derived mainly from general tax revenues (Restructuring the National Health System for Universal Primary Health Care, 1996).

Problems and challenges confronting the private health sector

"Over the past decade, expenditure in the private sector, particularly that by medical schemes, has increased more rapidly than the rate of inflation, with expenditure on medicines and private hospitals increasing rapidly during this period. The rise in expenditure on benefits is due to increases in both unit costs and utilisation levels. Several factors have driven these increases, including the fee-for-service reimbursement of providers, the fact that some doctors have a stake in the financial performance of hospitals through share ownership, as well as the fact that many health service providers (including hospitals and medical practitioners) benefit financially from selling medicines. Cost increases have also been driven by increases in the proportion of scheme members who are elderly. As expected, the level of contributions to medical schemes has also risen rapidly, since schemes must finance the benefit payments out of contributions" (Restructuring the National Health System for Universal Primary Health Care, 1996:3).

"Recent changes to the legislation governing medical schemes, (the Medical Schemes Amendment Act of 1993) have improved the capacity of schemes to manage their costs to some extent. However, previous changes to the legislation (specifically, the 1989 amendments to the Act), have created a situation in which the cross-subsidisation of elderly members by younger, healthier members is undermined, in that medical schemes are now permitted to charge high risk members higher contributions, based on their previous medical claims or on pre-existing conditions. Certain schemes are thus becoming increasingly unaffordable for the elderly and chronically ill who will rely more heavily on public sector health services" (Restructuring the National Health System for Universal Primary Health Care, 1996:4).

"The rapid cost spiral and fragmentation of risk pools within medical schemes is of concern to a number of health sector stakeholders. Medical scheme membership is becoming increasingly unaffordable for many South Africans, and especially those with low incomes, the elderly and those with chronic illnesses.

In the absence of a substantial cost-containment effort, scheme membership may begin to decline significantly, and expansion of the medical scheme market to low income earners is unlikely to occur. This will have negative consequences for the public health sector, through increasing numbers of medical scheme members becoming dependent on public sector services for their health care. It is recognised that recent trends towards the emergence of managed care arrangements may go some way towards alleviating cost pressures in the private health insurance market. However, additional regulatory measures are considered essential in order to address the full range of inefficiencies now pertaining in that market" (Restructuring the National Health System for Universal Primary Health Care, 1996:4).

Need for restructuring of the National Health System

The serious problems in both the public and private sectors, and in the interface between them, will become increasingly serious as the burden on the health services increases over time owing to the rapidly expanding HIV/AIDS epidemic, and to the ageing of the population and other epidemiological shifts inherent in the transition being experienced by the country.

Addressing these problems effectively will require a significant level of restructuring of both sectors and of their interactions. Some elements of this restructuring can be undertaken in the short term, while other elements will take at least five to ten years to implement. Particular priorities in this restructuring process include the following:

- Efforts to restrict the growth of health sector expenditure in South Africa by focusing on the more efficient and effective use of existing resources
- Improving the access of South Africans to health services, as well as the quality of services, particularly at the primary care level and in geographic areas that are currently underresourced
- Promoting the redistribution of resources between levels of care within the public sector
- Achieving a redistribution of resources currently used only in the private sector to make them accessible to a broader section of the population
- Promoting cost-containment efforts within the private sector

(Restructuring the National Health System for Universal Primary Health Care, 1996).

Policy framework for the National Health System

This policy document contains a set of policies that will involve a comprehensive restructuring of health care in South Africa, aimed at the development of a comprehensive, efficient and equitable national health system. More specifically the policies set out here aim to achieve

- substantial, visible and sustainable improvements to the accessibility, efficiency and effectiveness of a publicly funded primary health care (PHC) service;

- improvements in the funding, efficiency and governance of the public hospital system; and
- improvements in the equity and efficiency of the private health sector, and in the interaction between the public and private health care systems

(Restructuring the National Health System for Universal Primary Health Care, 1996).

Principles of the PHC delivery system

- The national health system should ensure universal access (the ease with which health services may be accessed geographically, financially and socially).
- The national health system should build on and strengthen the existing public sector PHC and hospital system.
- The national health system should be congruent with, and should strengthen the emerging district-based health care system.
- The national health system should be based on a comprehensive primary health care approach, and should use population-based planning and delivery mechanisms.
- The PHC delivery system should be fully integrated and consistent with other levels of the National Health System.
- The national health system should optimise the public-private mix in health care provision, and should ensure the achievement of the redistribution of resources between the private and public sectors.
- The national health system should preserve the choice of individuals to use private providers and to insure themselves for doing so.
- The national health system should emphasise the needs and rights of users of the system, and should empower users and their communities to participate in governance of the health care system.
- The national health system should be outcome driven, and should place substantial emphasis on quality of patient care, on health outcomes, and on the "caring" aspects of health care services.
- The organisation and functioning of the national health system should be based on the principle of decentralised management which will aim to create the maximum possible management autonomy at health facility level within the framework of national public service guidelines (Restructuring the National Health System for Universal Primary Health Care, 1996).

The district health system

"The South African Government of National Unity, through its adoption of the Reconstruction and Development Programme (RDP) in 1994, committed itself to the development of a District Health System based on the Primary Health Care approach as enunciated at Alma Ata in 1978. This approach is the philosophy behind which many health systems around the world have been reformed, and out of which has developed the concept of the District Health System. District-based health services are now applied successfully in many countries, and have been adapted to a wide variety of situations, from developing countries on our own continent, to more sophisticated systems such as that of Canada"

(Restructuring the National Health System for Universal Primary Health Care, 1996: Appendix 2 page 1).

A national health system based on this approach is as concerned with keeping people healthy as it is with caring for them when they become unwell. These concepts of "caring" and "wellness" are promoted most effectively and *efficiently by creating small management* units of the health system, adapted to cater for local needs. These units provide the framework for our district-based health system, so that a district health authority can take responsibility for the health of the population in its area (Restructuring the National Health System for Universal Primary Health Care, 1996).

Primary health care (PHC) services are at present provided in a fragmented and inefficient manner. Co-ordination between the public and private sectors is minimal, and within the public sector there has been a multitude of different (and overlapping) authorities responsible for health services. Salaries, and terms and conditions of service vary greatly between different local authorities, and between local authorities and the provincial and national administrations.

Restructuring district level health services will be a complex process, but failure to do so will perpetuate inefficiency and inequity. An integrated health system is built on the provision of health and health care services at the community level. Central to the PHC approach is full community participation in the planning, provision, control and monitoring of services.

Comprehensive PHC activities encompass all that is required to make a difference to people's lives: to make them healthy, and to advocate for the conditions that will keep them healthy. This is the "wellness" approach to health systems. It recognises that our health is determined by factors that go beyond the traditional definition of health and health care. There are social and other determinants such as housing, water, sanitation, education, employment, income, the environment, and individual lifestyle that all play major roles in determining our health. This means that a health service based on wellness should, *inter alia*,

- be structured so that appropriate emphasis is placed on prevention, health education and promotion, early intervention, and rehabilitation;
- be responsive to community needs by placing control and management responsibilities at a local level;
- eliminate inequities and establish intersectoral development links;
- integrate institutional, community-based and preventive programmes both within the health sector and with other sectors impacting on health;
- reduce waste and eliminate duplication at all levels (Restructuring the National Health System for Universal Primary Health Care, 1996).

The system must be structured so that no one in need is prevented from accessing any of the levels of care that they may require, rapidly and efficiently, and so that all will receive the highest quality of care at all levels.

The district level is the level at which co-ordination of all district health services takes place, and is the unit of management of the health system that is best able

to drive it. "The district must be large enough to be economically efficient, but small enough to ensure effective management which is accountable to local communities and is responsive to local needs through the participation of communities and of staff in the planning and management of services" (Restructuring the National Health System for Universal Primary Health Care, 1996: Appendix 2 page 2).

7.2.1 Average population per hospital bed

Mpumalanga has three health regions: Eastern Highveld, Highveld and Lowveld and these comprise 8, 7 and 6 health districts respectively. These districts fairly closely resemble magisterial districts or combinations thereof. Health care beds per 1000 people and bed occupancy ratio data were obtained from the Mpumalanga Department of Health, Welfare and Gender Affairs. Beds per 1000 people were calculated at a health district level, while the bed occupancy ratios are at a health region level.

According to the map, the distribution of hospital beds shows that each health region has districts with very low levels of provision. The Highveld region has a cluster of districts in the west that has a low level of provision. Philadelphia, with 2,26 beds per 1000, is the exception in this cluster of districts with less than 1,45 beds per 1000. The Eastern Highveld region has clusters of low provision in west. Delmas and Highveld Ridge have only 0,55 and 0,65 beds per 1000, respectively. Bethal, which borders on Highveld Ridge, has 3,29 beds per 1000. In the Lowveld region, Tonga, Shongwe and Nelspruit have only 0,1, 1,23 and 1,37 beds per 1000, respectively. The other Lowveld districts have significantly higher levels of provision, especially Barberton with 5,26 beds per 1000.

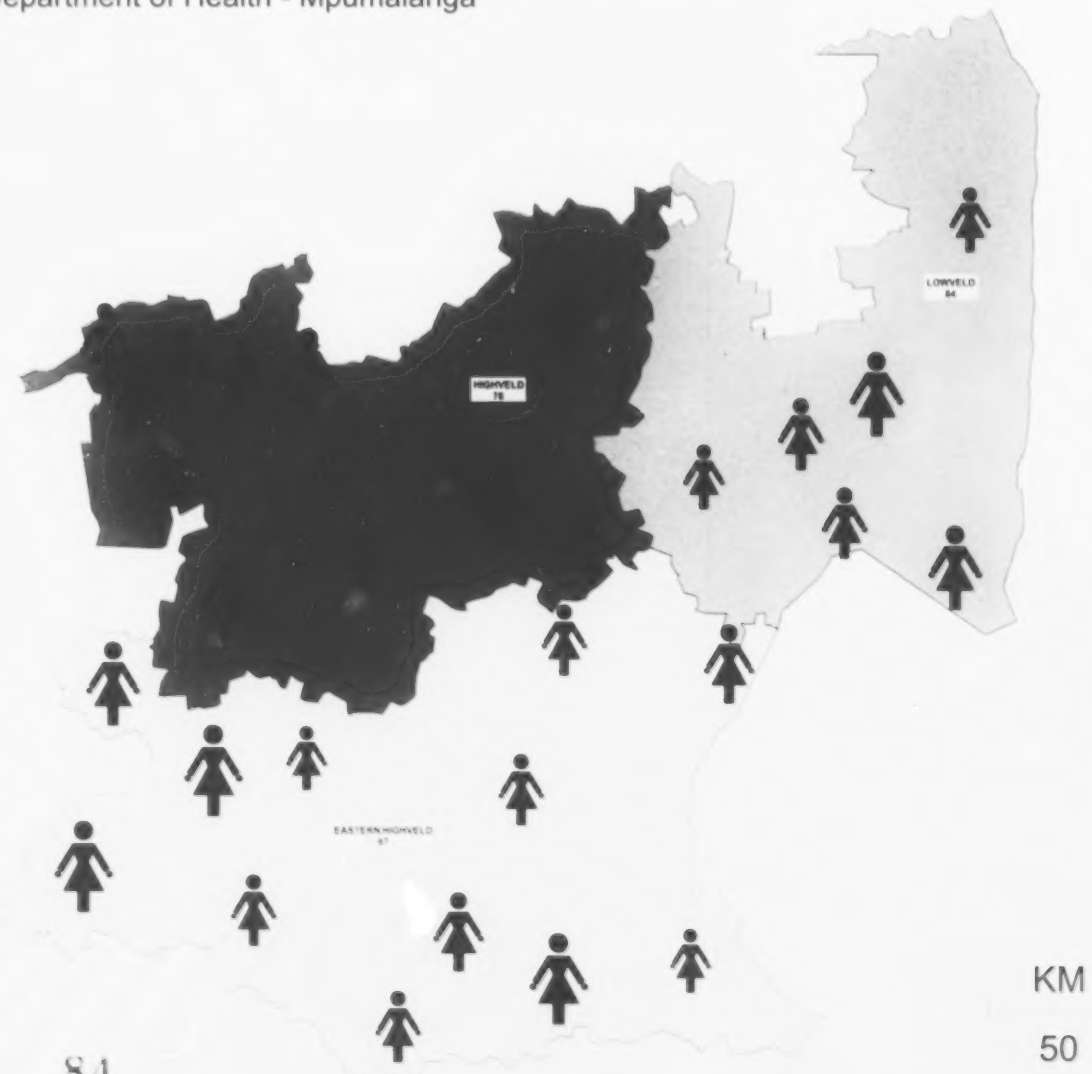
"One of the measures of efficiency of hospitals is the bed occupancy rate which is the proportion of beds occupied over a year. This is usually expressed as a percentage and the optimum level is considered to be 70 to 80%. Occupancy rates below 50% indicate underutilisation and rates over 100% indicate overcrowding (Health Systems Trust, 1996)". Preliminary bed occupancy statistics for the period April 1996 to January 1997 indicated that of the three regions only the Highveld was operating at the optimal level. The Lowveld was slightly above optimum and the Eastern Highveld was approaching overcrowding at 97% bed occupancy.

B. O'Leary
GIS Unit
Human Sciences Research Council

MAP 11 : DISTRIBUTION OF HOSPITAL BEDS

Source : Department of Health - Mpumalanga

HSRC RGN GIS UNIT



HEALTH REGION

Bed occupancy

78 to	78
78 to	84
84 to	97

MAGISTERIAL DISTRICT

Population per bed

215 to	327
327 to	473
473 to	889
889 to	1 844
1 844 to	45 062

Table 11 Distribution of hospital beds

DISTRICT	TOTAL POPULATION	TOTAL NO. OF BEDS	POPULATION / BED
Amersfoort	34 538	12	2 878
Balfour	37 771	0	n/a
Barberton	72 281	333	217
Belfast	28 642	11	2 604
Bethal	68 032	203	335
Carolina	30 090	73	412
Delmas	43 908	37	1 187
Eerstehoek	236 118	357	661
Ermelo	111 851	296	378
Groblersdal	59 253	38	1 559
Hoëveldrif/Highveld Ridge	160 863	90	1 787
Lydenburg	36 346	127	286
Middelburg (M)	143 174	315	455
Moutse	101 455	453	224
Nelspruit	62 813	242	260
Nkomazi	330 982	366	904
Nsikazi	355 005	822	432
Pelgrimsrus/ Pilgrim's Rest	28 483	105	271
Piet Retief	64 297	383	168
Standerton	87 198	382	228
Volksrust	29 971	100	300
Wakkerstroom	33 502	0	n/a
Waterval-Boven	9 062	12	755
Witbank	177 390	493	360
Witrivier/White River	30 120	0	n/a

7.3 Housing

"The estimated housing backlog in South Africa is 1,5 million housing units. If the natural population growth is added to the backlog, a total of 3,5 million housing units will have to be provided over the next ten years" (White Paper, 1994:11).

Owing to the extent of unemployment in South Africa and the associated poverty, approximately 80% of those requiring housing earn less than R3 500 a month and therefore depend on government assistance to obtain a home of their own. Approximately 60% of those in need of housing earn less than R1 500 per month and are totally dependent on government assistance (National Department of Housing, Website, 1996).

"Government's goal is to increase housing's share of the total state budget to 5%. It also intends to increase housing delivery substantially to 350 000 units a year to reach the Government of National Unity's target of 1 000 000 houses in five years" (Annual Report of the Department of Housing, 1995:6).

Housing and the RDP

Housing lies at the core of the Reconstruction and Development Programme (RDP), and South Africa's housing effort must serve as an engine of the economy and as a major spur to job creation.

The general value framework for housing in South Africa complements the RDP's principles and objectives. All the housing and related principles and objectives of the RDP have been incorporated into the White Paper on Housing, which addresses all policy issues regarding housing.

Primarily the RDP aims at redressing past imbalances and distortions. It addresses socio-economic backlogs at scale by providing basic services and infrastructure (including housing), providing employment and maximising employment creation in the process (Annual Report of the Department of Housing, 1995).

The White Paper

The housing White Paper has provided the basis for all the department's activities. It is the product of extensive consultation involving government at national and provincial level, non-governmental organisations, community representatives and the private sector.

The policy has seven major thrusts designed to turn South Africa's housing situation around:

- **Housing support for a people-driven process**
  "To help individuals and low-income families with housing, government at all levels, in conjunction with the private sector and civil society, is planning housing support mechanisms throughout the country. The White Paper

clearly sets government assistance for the poor as a priority. The poor, however, cannot easily access this assistance entirely on their own. Intervention is necessary to establish a range of financial, institutional, technical and logistical support mechanisms that will enable communities to continually improve their own housing circumstances. Such mechanisms can be organised in the form of housing centres (an identifiable place or base where beneficiary families could gain access to a serviced site and the relevant subsidy package). Where required, they could receive training in materials manufacture and basic construction skills, together with the necessary information and advice to enable them to contribute directly to the design and construction of their own houses or dwellings" (Annual Report of the Department of Housing, 1995:7).

- **Stabilisation of the housing environment**
  "Many communities were in disarray when democracy dawned in South Africa. A lack of functioning local authorities, since the activities of many had been disrupted by rent, bond, and service charge boycotts, meant that even the hitherto limited stream of private sector investment had dried up. The task now is to stabilise the residential environment. Conditions conducive to investment by the public and private sectors and by individuals in these areas must be created" (Annual Report of the Department of Housing, 1995:8).

- **Consolidation and unification of housing institutions**
  "A rationalised statutory, governmental and parastatal institutional framework within which the national housing strategy will be implemented is a priority of government. Fragmentation, overlapping, wastage and inefficiencies in the institutional housing set-up must be eliminated to establish an institutional basis from which a sound long-term strategy can be launched" (Annual Report of the Department of Housing, 1995:10).

- **Encouragement of savings for housing**
  "Individual savings for housing are recognised internationally as a major route towards mobilising housing resources. A positive savings record of more than nine months qualifies a borrower for a home loan. In 1995, a nine-month savings scheme was introduced for those people who cannot afford deposits for minimum housing loans" (Annual Report of the Department of Housing, 1995:10).

- **A subsidy scheme to provide housing opportunities for millions.**
  The Housing Subsidy Scheme aims at mobilising credit and is one of the cornerstones of the government's approach to the housing challenge. Its goal is to assist households that cannot provide their own housing.

- **Mobilisation of credit at scale**
  "Virtually none of the nation's savings is currently being invested in low-income housing. Therefore, the majority of the population is practically excluded from access to housing finance. The National Housing Finance Corporation (NHFC) is to address this problem and its task entails removing impediments and reducing the funding costs to small and medium lenders;

limiting and spreading the risk associated with lending to low-income borrowers and providing funds for small retail lenders; reducing interest costs to low-income borrowers; and addressing the regulatory, policy and socio-political constraints on sustained expansion of retail housing credit.

"The NHFC will constitute a long-term intervention aimed at providing structural adjustment within the established financial sector to improve access to finance for those historically denied such access. It will also, however, promote the establishment and growth of innovative alternative retail finance capacity to service market segments in which the more established sector is not yet ready to engage" (Annual Report of the Department of Housing, 1995:13).

- **Making land available for housing**
  "The land delivery process is critical to housing. This includes the identification and allocation of undeveloped land and its transformation into serviced sites for residential development. The fragmented and extremely complex regulatory network within which land is delivered is often inadequate and in conflict with the aims and objectives of the housing strategy and the RDP. Short-term intervention to aid the speedy delivery of land is essential. As a result, the Development Facilitation Act was drafted and promulgated as a short-term measure. This Act makes it possible to lay down nationally uniform norms and standards for land development, offers national legislation in parallel to provincial laws as an alternative, and provides more appropriate mechanisms for transparent, rapid land delivery, an option for provincial administrations, local authorities and the private sector to adopt and utilise. This Act also provides for a Development and Planning Commission to advise the Minister on policy and laws relating to planning, development, land and infrastructure issues" (Annual Report of the Department of Housing, 1995:13).

Obstacles to the housing delivery process in 1995

"The housing sector is coming under fire increasingly for its apparent failure to deliver. Since the first democratic general elections in April 1994, there has been a noticeable slump in housing delivery and this hiatus is causing anxiety and concern. The ongoing policy debate appears to lack decisiveness. Meanwhile, the position among the homeless is deteriorating as people battle for a stake in the dwindling supply of housing opportunities and resources" (Annual Report of the Department of Housing, 1995:17).

"Under the previous dispensation the State's housing functions were fragmented among 17 national and provincial authorities. Without a coherent national housing policy, housing activities were being conducted on an inconsistent and inequitable basis. In the former TBVC states and self-governing territories, authorities paid scant attention to the growing housing needs of their communities, while in the rest of the country the Own Affairs Administrations were extravagant in their allocation of housing subsidies for the benefit of a privileged few. The most the homeless population could hope for was access to a rudimentarily serviced building site without any support in constructing even a

basic shelter. Not surprising, therefore, was the size of the housing backlog inherited by the Government of National Unity" (Annual Report of the Department of Housing 1995:17).

"Government had two options in its approach to the housing problem. It could either follow past practice by entrenching direct State provision as the primary means of housing the poor – a route that has generally been discredited throughout the world, especially in developing countries – or it could, in line with current international wisdom, adopt an enabling approach which, although results were likely to fall far short of expectations in the short term, would nevertheless offer the best chance of longer-term sustainability. In view of the magnitude of the problem, and the serious limitations on resources, Government was left with little choice but to embark on the onerous exercise of restructuring housing delivery by a process that would draw in all available capacity" (Annual Report of the Department of Housing, 1995:17).

"South Africa is fortunate in having a sophisticated construction industry and an advanced financial sector that have the capacity to meet the effective demand for housing products and services. Nevertheless, the market in which they operate is dysfunctional in that only 15% of households requiring housing are able to meet their needs in the market place without assistance. The remaining 85% depend on State support to a greater or lesser extent. To correct deficiencies in the market, a wide range of interventions to ease the logjam are necessary. These interventions refer to the seven major thrusts designed to improve South Africa's housing situation. Such interventions should be set up coherently and consistently within the framework of a national housing policy and strategy. The national Government's responsibility is therefore to establish a sustainable housing process through interventions that influence the housing market positively" (Annual Report of the Department of Housing, 1995:18).

7.3.1 Distribution of informal housing

Traditional and shack housing types both fall into the informal housing category. This is a somewhat unfortunate grouping of housing data as traditional housing could be viewed as having the same intrinsic value as shacks. A high percentage of informal housing in a rural district probably reflects a high level of traditional housing. Conversely, an urban district with high levels of informal housing is more likely to have a high percentage of shacks.

The data used is from Eskom's NELF database. The accuracy of this database has been questioned within Eskom. A 26% inaccuracy was found between the values for total housing units and the summed total informal and formal service points. Percentage informal housing must therefore be calculated using a denominator of informal plus formal, rather than housing units.

The map shows that the former black areas are all in the upper three ranges (46 to 92%) except for Mdutjana, which has 45% informal housing. As these districts are generally rural, a high percentage of traditional housing can be expected in these areas. The lack of western style development in these areas is evident in the low numbers of formal houses. Moutse (81%), a former white area, is in the highest range and is adjacent to the former Bophuthatswana-KwaNdebele cluster. The fragmented KaNgwane cluster in the east of the province shows a very high percentage difference from its neighbours: Nkomazi has 57% more informal housing than neighbouring Barberton, a former white area; Nsikazi has between 35 and 29% more informal housing than its former white neighbours and Eerstehoek is closer to its former white neighbours, having a percentage difference of between 2 and 19%.

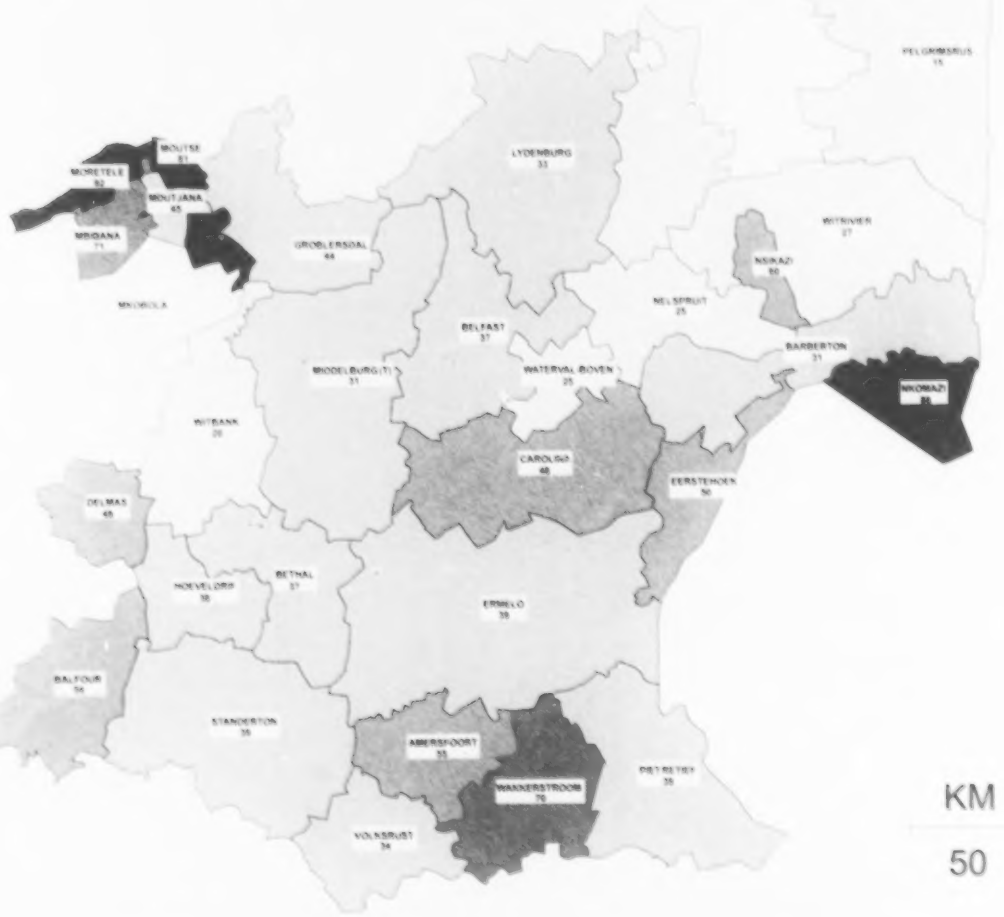
Sixteen of the 22 former white areas are in the lowest two ranges (15 to 46%), while clustered in the south of the province are Amersfoort (55%) and Wakkerstroom (70%); in the south-west Delmas (49%) and Balfour (54%) and in the north-west and centre respectively Moutse (81%) and Carolina (48%), all falling in the upper three ranges of 46 - 92%. Traditional housing in South Africa is generally less well serviced than formal housing. The high levels of informal housing in most of the former black areas and six former white areas are an indicator of a backlog in household services.

B. O'Leary
GIS Unit
Human Sciences Research Council

MAP 12 : PERCENTAGE INFORMAL HOUSING

HSRC RGN

Source : NELF Database



N

% informal houses

	15	to	30	
	30	to	46	
	46	to	61	
	61	to	77	
	77	to	92	

KM

50

Table 12 Percentage informal housing

DISTRICTS	TOTAL HOUSES	TOTAL INFORMAL HOUSES	% INFORMAL HOUSES
Amersfoort	6 167	3 372	54,7
Balfour	7 131	3 836	53,8
Barberton	16 887	5 175	30,6
Belfast	5 795	2 155	37,2
Bethal	11 328	4 143	36,6
Carolina	5 815	2 817	48,4
Delmas	9 084	4 478	49,3
Eerstehoek	11 650	5 881	50,5
Ermelo	23 434	9 218	39,3
Groblersdal	10 700	4 732	44,2
Hoëveldrif/ Highveld Ridge	31 593	11 962	37,9
Lydenburg	6 793	2 216	32,6
Mbibana	7 102	5 030	70,8
Mdutjana	10 493	4 740	45,2
Middelburg (M)	25 962	8 061	31,0
Mkobola	no data	no data	no data
Moretele	19 298	17 746	92,0
Moutse	6 540	5 293	80,9
Nelspruit	15 717	3 991	25,4
Nkomazi	38 652	33 930	87,8
Nsikazi	32 731	19 664	60,1
Pelgrimsrus/ Pilgrim's Rest	7 161	1 109	15,5
Piet Retief	12 124	4 699	38,8
Standerton	17 036	6 631	38,9
Volksrust	6 190	2 135	34,5
Wakkerstroom	5 655	3 986	70,5
Waterval-Boven	2 036	500	24,6
Witbank	35 519	6 942	19,5
Witrivier/White River	7 163	1 968	27,5

7.3.2 Retirement facilities

Introduction

The current dispensation on ageing in South Africa does not take demographic realities into account. The white population is significantly older than the rest of the population. "Demographic projections indicate that over the next 20 years the proportion of elderly people in the population will increase. The annual increase of older persons will result in a total of 3,4 million aged persons by 2015. The estimated percentage of persons aged 80 years and over is increasing. Persons older than 80 years of age are particularly vulnerable, especially older women and the historically disadvantaged" (White Paper for Social Welfare, 1996:93).

Cost of care of the elderly

There is an unrealistic emphasis on institutional care for older persons in the white community. The average unit cost of between R11 000 and R22 000 per person per annum for institutional care indicates that the current dispensation is unaffordable. There is also an inappropriate emphasis on the government's responsibility for the care of the aged. There is limited information on services provided by informal service providers. "About 61% of the total national welfare budget is spent on social security and social welfare services for the elderly" (White Paper for Social Welfare, 1996:93). An in-depth evaluation of the present situation regarding ageing has been launched by the Department of Welfare together with all stakeholders.

Lack of retirement provision

"Economic conditions in South Africa are unfavourable, and few job opportunities exist. Large numbers of South Africans are unemployed, work in the informal sector or work in low-wage categories and consequently lack the means to save for their retirement. For those employed in the formal sector, preparation for retirement is inadequate or completely lacking. There are not enough incentives for financial provision for retirement and old age. It is as a result of these factors that elderly persons are vulnerable and are often in need of social support" (White Paper for Social Welfare, 1996:93).

Disparities and inappropriate services

"Racial, urban and rural disparities exist in service provision, particularly with respect to old age homes. Old age homes and service centres for the elderly are occupied and used largely by whites. There are backlogs in providing facilities and services for the elderly as well as affordable housing in developing and underdeveloped communities, with an oversupply and underutilisation of other facilities and services in some communities. There is an overemphasis on institutional care and informal care is not fully acknowledged in social programming" (White Paper for Social Welfare, 1996:94).

Social support systems for the care of black older persons have disintegrated in some communities owing to a number of factors such as violence and

displacement. Recreational services for older persons are mostly geographically and financially inaccessible, and are also inadequate in disadvantaged communities. There is a lack of appropriate and affordable accommodation for the elderly. Older people, especially those who are disadvantaged, women and persons over 80 years of age are generally nutritionally vulnerable (White Paper for Social Welfare, 1996).

Approach to ageing

"There needs to be a shift away from the notion of 'care of the aged' to 'ageing', which can be defined as a holistic and positive approach, that recognises ageing as a natural phase of life without denying the special needs of older persons. The basic principle underlying ageing is to enable older persons to live active, healthy and independent lives for as long as possible. The family is the core of the support systems for the elderly" (White Paper for Social Welfare, 1996:94).

Community-based services

Community-based services with the family as the core support system should be the foundation of a new dispensation on ageing. A good balance should be struck between individual, family, community-and government responsibility for older persons. Social systems to provide the elderly with essential social services should be developed (White Paper for Social Welfare, 1996).

Ethics and perceptions

A generally acceptable ethical viewpoint that addresses the needs and rights of the aged is a prerequisite for a just and responsible policy. A social commitment to a holistic approach to addressing the needs of the elderly is required.

"Different and changing perceptions of old age and the social status of older persons will affect society's understanding of their welfare needs. There needs to be a good balance between an emphasis on duration of life and quality of life (White Paper for Social Welfare, 1996:95).

National strategy

A national ageing strategy is being developed by the Department of Welfare together with all stakeholders. The following principles, guidelines and recommendations support the proposed transformation approach above (White Paper for Social Welfare, 1996):

- Every individual has the personal responsibility to provide for his or her retirement and old age.
- All organisations in civil society have the social responsibility to provide and care for their older members who are in need.
- The government has the responsibility to provide for the needs of disadvantaged, destitute and frail older persons who require 24-hour care and who do not have the financial resources to meet their own needs.

- Homes for older persons should provide only for the frail elderly. Provision of frail care should be limited to a maximum of 2% of the number of persons over 65 years of age.
- All old age homes have a responsibility to provide essential outreach services in the community. Creative options are needed to accommodate elderly persons who are destitute or homeless.
- Appropriate, adaptable and affordable housing for older persons and their families is the cornerstone of any new dispensation. The Department of Welfare will co-operate with the Department of Housing to develop a strategy to address this need as a matter of priority.
- The Department of Welfare and welfare organisations will advocate increased access of the elderly to affordable primary health care and other basic social services, particularly in rural areas. The welfare sector will also co-operate with the Department of Health to facilitate access to nutritional programmes. These services and programmes are critical to ensuring that older persons remain in the community for as long as possible.
- All social policies and programmes will demonstrate a commitment to and promote the concept of integrating the aged into society, that is, a society in which ageing is a natural part of the life cycle.
- Social services to older persons in need will be community-based. Family care will be the baseline of age management programmes. Home care of elderly people will be encouraged. Capacity-building programmes will be provided to promote home care, including support programmes for care givers. Options such as day care, short-stay centres and outreach programmes will be explored.
- A plan of action with stakeholders to eliminate all forms of racial discrimination in government-funded services will be implemented immediately. Any planning concerning equity of services will be deeply sensitive to people's diverse values and traditions.
- The protection of the rights of older persons requires special attention given the prevalence of age discrimination, abuse and exploitation, particularly concerning social grants.

Strategy for social security for elderly people

- The government will advocate that all people in formal employment belong to a compulsory retirement scheme. Public education programmes will be provided to promote retirement planning.
- The government will also negotiate with other relevant stakeholders to ensure that retirement contributions are fully transferable when changing employment.
- Social assistance programmes will continue to be provided to support elderly people who qualify for such benefits.
- The development of a savings scheme will be explored to encourage individuals to take responsibility for their own retirement as well as to alleviate the pressure on the social grants system (White Paper for Social Welfare, 1996)

Grants for elderly persons

"Grants for elderly persons comprise a large proportion of overall social assistance. The number of elderly South African beneficiaries has stabilised, with fairly good coverage (80%), but there are still particular pockets where many eligible people do not get a grant. The impact of a grant income on household income for people in poverty is dramatic. The majority of people in poverty who are not white live in three-generation households, and the grant is typically turned over for general family use. In 1993, there were 7,7 million people in households that received a state grant. For black South Africans, each pensioner's income helped five other people in the household" (White Paper for Social Welfare, 1996:58).

The population of over 65 year olds in South Africa is expected to reach seven million in the year 2016 compared with 1,8 million in 1994. These figures must surely prompt some urgency in building old age homes, homeless shelters and frail care facilities for the elderly. The government alone will not be able to deliver any such facilities, thus a new approach is required involving all stakeholders to meet the housing needs of our elderly.

Constraints to housing for the aged

The single most significant constraint to the housing delivery process for the aged is that of affordability. The level of poverty in South Africa is significant: approximately 40% of all households in the country have a joint household income of less than R800-00 per month. This generates financial insecurity after retirement and necessitates retirement employment. The average monthly grant to pensioners from the government is approximately R420-00.

The government's goal in the medium to long term will have to be to reduce the levels of dependency and increase the levels of independence from state financial assistance. In the short term the government will have to pay special attention to the possibility of modifying the government housing subsidy programme, so as to provide the aged with an affordable entry to equal opportunities of housing, as well as elderly care.

At present persons buying into a retirement centre purchase not only accommodation but also security and health care, an important aspect of this service. However, the cost of including health care is high and may detract from the marketability of the project.

Role of government in meeting housing needs for the aged

- The government should reconsider the reduction of subsidies for the services for the aged.

- Ways need to be found for funding developments for subsidised rental accommodation.

- The design and pricing of new retirement village developments should be within the disposable income of the population in the area, with greater emphasis on the final product meeting the needs and winning the confidence of the community, as well as giving added protection to the elderly according to the Retirement Act of 1988.

- The greatest need in the black elderly community is that of proper accommodation for service centres, luncheon clubs, etc. Old age homes and retirement villages are not the top priority in the black community. The greater number of elderly in this community stay with families and the pension payout forms part of the family income.

Site identification

To accommodate the elderly with or without private transport, to avoid traffic congestion and to maximise land use in the city and surrounding areas, the following criteria need to be taken into account before building homes for the aged:

- The area should show growth in the aged population.
- Sites should not have excessive slopes or steps and should have a north orientation.
- Proximity to shopping centres, banks, post offices, police stations, churches and entertainment is essential.
- The area should have easy access to public transport nodes and not be isolated from the general urban or suburban environment.
- The area should be close to clinics and hospitals.
- The area should also be close to support services by local authorities such as libraries, health services, programmes for the aged, etc.

Service centres

A service centre is the location of a variety of activities and services for the aged. It serves as the base from which various services are delivered to the elderly in the community and in their own homes. Such a centre can provide social, recreational, educational, counselling, health, nutritional, employment and voluntary community service components among other things. It can also be the location for finding, recruiting and remotivating isolated, rejected and problem-ridden older persons and through its services can help restore their identity and sense of usefulness.

Support and advice should be given to communities regarding the development of service centres, especially communities within or near to affordable housing developments that have a large elderly population.

Future developments

In a recent survey conducted by Ephraim Thobakgale (Condev Company) and Elsie van Vuuren (Mpumalanga Council for the Aged) on retirement dwellings in Mpumalanga, the following were noted:

- Middelburg had the greatest number of white elderly persons in the Mpumalanga province.

- The distance of a proposed development (the Aero Haven Retirement Village in Middelburg) from the central business district (3,5 km) would create transport problems, since no buses nor public transport infrastructure existed. The retirement village would have been forced to provide daily transport, thus pushing the levies even higher.

- There was a large surplus of beds in retirement villages offering full frail care facilities. Such facilities should only be considered as a future development.

- Middelburg had one existing retirement village sold under life rights. This was Kosmos Park with 43 two-bed units (116 m²), selling for between R115 000 - R130 000 depending on the condition of the unit. Units in this development had not sold well in the past (sometimes sold after a period of six to eight months). The second phase of the development had not been built, as there was no immediate need.

- The proposed selling prices of the new development (Aero Haven) would be far beyond the disposable income of the old people of the town and would fail to attract people from outside the area owing to a lack of activities or attractions nearby.

- The greater need in Middelburg appeared to be more for subeconomic housing schemes or subsidised rental accommodation.

- If Middelburg wished to capture the retirement village market in this area, it would need to offer a cheaper product than the one proposed.

- In summary the purchase price of the land for Aero Haven Retirement Village and the proposed selling prices of the units rendered this type of development unfeasible.

Areas in Mpumalanga to be considered for a retirement village

The following towns were found more appropriate for the siting of such accommodation:

- Nelspruit, where the waiting list and unit prices are more encouraging than most areas in the Mpumalanga province

- White River / Hazyview area – even though it has a lower elderly population than for example Middelburg, a feasible development would attract elderly people from other areas owing to its proximity to the Kruger National Park.

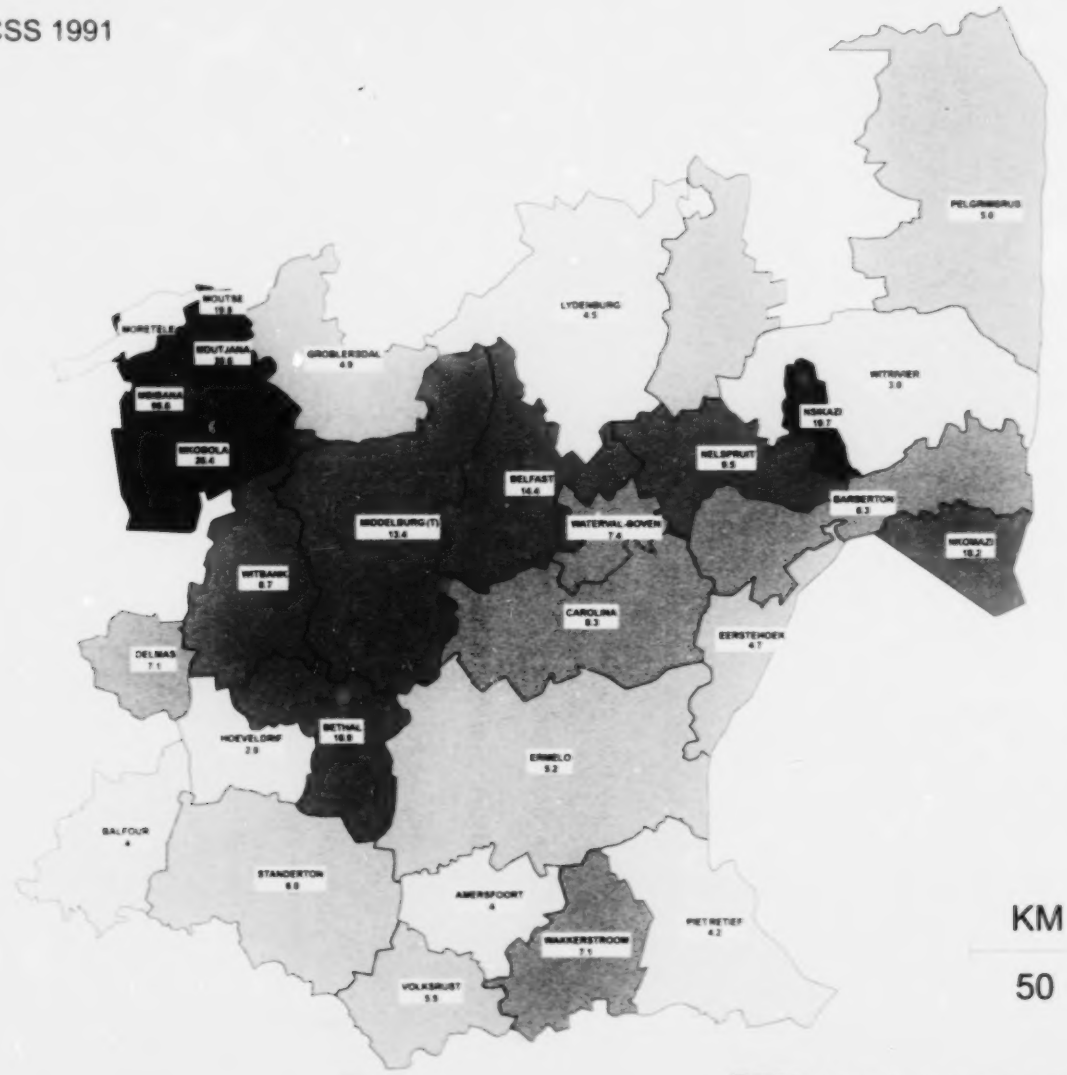
- Witbank with the second largest population of elderly whites in Mpumalanga as well as a population with a greater disposable income than Middelburg.

E. van Vuuren
Mpumalanga Council for the Aged

MAP 13 : PERCENTAGE POPULATION AGED 65 YEARS OR OLDER IN RETIREMENT DWELLINGS

Source : CSS 1991

HSRC
RGN
GIS UNIT



N

Population 65 or more

.4	to	4.5
4.5	to	6.0
6.0	to	8.3
8.3	to	18.9
18.9	to	96.6

KM

50

101

BEST COPY AVAILABLE

Table 13 Percentage population aged 65 years or older in retirement dwellings

DISTRICT	OCCUPANCY OF DWELLINGS	TOTAL AGED 65 - 99	% OCCUPANCY
Amersfoort	5	1 194	0,4
Balfour	6	1 505	0,4
Barberton	123	1 929	6,4
Belfast	185	1 285	14,4
Bethal	409	2 158	19,0
Carolina	106	1 266	8,4
Delmas	153	2 152	7,1
Eerstehoek	302	6 342	4,8
Ermelo	217	4 133	5,3
Groblersdal	102	2 063	4,9
Hoëveldrif/ Highveld Ridge	42	2 063	2,0
Lydenburg	73	1 606	4,5
Mbibana	2 189	2 264	96,7
Mdutjana	1 510	4 932	30,6
Middelburg (M)	614	4 559	13,5
Mkobola	1 775	6 707	26,5
Moretele	no data	no data	no data
Moutse	969	4 883	19,8
Nelspruit	237	2 475	9,6
Nkomazi	1 441	7 878	18,3
Nsikazi	1 660	8 423	19,7
Pelgrimsrus/ Pilgrim's Rest	39	772	5,1
Piet Retief	83	1 959	4,2
Standerton	194	3 210	6,0
Volksrust	68	1 231	5,5
Wakkerstroom	120	1 676	7,2
Waterval-Boven	34	459	7,4
Witbank	371	4 239	8,8
Witrivier/White River	41	1 365	3,0

7.4 Water and sanitation

The sections covering the national water and sanitation goal, the basic service provision policy, reconstruction and development, the water supply and sanitation policy, water supply, the sanitation problem and its impact and future prospects were abridged from the water supply and sanitation policy White Paper of November 1994 and the Draft National Sanitation Policy of June 1996.

National water and sanitation goal

The goal of the government is to ensure that all South Africans have access to essential basic water supply and sanitation services. This must be available at a cost that is affordable to households and the country as a whole.

Basic service provision policy

"The policy of the Department of Water Affairs and Forestry, in full support of the objectives and targets of the Government's Reconstruction and Development Programme, is to ensure that all South Africans can have access to basic water supply and sanitation services within seven years or less" (White Paper, 1994:15). The following section of the White Paper provides basic guidelines for the provision of services and for capacity building and training.

"The setting of guidelines and standards must be approached with caution. Guidelines are intended to assist decision making, whilst standards are enforceable absolute limits. The rigid application of guidelines or inappropriate standards can have the opposite effect to that intended. An example would be the closure of 'sub-standard' water supplies which forces communities to revert to sources of even worse quality" (White Paper, 1994:15).

"Given that they are chosen to be the minimum needs to ensure health, the levels of service presented below should be seen as minimum standards to be applied in publicly funded schemes unless a relaxation has been specifically approved. This does not mean that higher standards cannot be applied. However, there is a direct correlation between the standard of service and the cost, both in terms of initial capital and operation and maintenance. Where higher standards of service are to be provided, the costs will not normally be supported by the programmes of the Department" (White Paper, 1994:15).

Reconstruction and development

"The Reconstruction and Development Programme (RDP) adopted by the Government of National Unity is more than a list of the services required to improve the quality of life of the majority of South Africans. It is not just a call for South Africans to unite to build a country free of poverty and misery. It is a programme designed to achieve this objective in an integrated and principled manner" (White Paper, 1994:1). The RDP principle of an integrated and sustainable programme has already been identified as critical to the success of service provision. It is of little value to have a water supply and sanitation strategy that is not part of a comprehensive development strategy.

"The need for development to be a people-driven process is fundamental. There is wide international experience that confirms the view that the provision of services in poor communities will fail if the people themselves are not directly involved. The involvement and empowerment of people is thus a cornerstone of the approaches proposed. One reflection of this must be the democratisation of the institutions at all levels of the sector since they are often among the first points of contact between communities and the organised State" (White Paper, 1994:6).

"Since water in particular can easily become a focus of conflict within and between communities, the development of effective delivery mechanisms must contribute to the RDP principle of achieving peace and security for all. Related to this, the very establishment of the goal of assuring that all South Africans have access to the basic services needed to ensure their health is a contribution to the process of nation-building" (White Paper, 1994:6).

Finally, the link between reconstruction and development remains a guiding concept. The RDP identifies the provision of infrastructure for services such as water supply and sanitation as one of the key elements of its strategy for developing the South African economy along its new path. The way in which services are provided must ensure that they do not simply satisfy people's basic needs, but also contribute to the growth of a dynamic economy, which is increasingly able to provide all South Africans with opportunities for a better life.

Water supply and sanitation policy

Policy principles

Local and international experience and the premises of the Reconstruction and Development Programme have led to the adoption of the following principles as the basis for the policy that follows. These principles assume a context of universal human rights and the equality of all persons regardless of race, gender, creed or culture.

- **Development should be demand driven and community based**

Decision making and control will be devolved as far as possible to accountable local structures. There is a reciprocal obligation on communities to accept responsibility for their own development and governance, with the assistance of the state.

- **Basic services are a human right**

This refers to a right to a level of services adequate to provide a healthy environment. It does not imply the right of an individual person or community to demand services at the expense of others.

- **"Some for All", rather than "All for Some"**

To give expression to the constitutional requirements, priority in planning and allocation of public funds will be given to those who are presently inadequately served.

- **Equitable regional allocation of development resources**

The limited national resources available to support the provision of basic services should be equitably distributed among regions, taking account of population and level of development.

- **Water has economic value**

The way in which water and sanitation services are provided must be in accordance with the growing scarcity of good quality water in South Africa in a manner that reflects its value and does not undermine long-term sustainability and economic growth.

- **The user pays**

This is a central principle to ensure sustainable and equitable development, as well as efficient and effective management.

- **Integrated development**

Water and sanitation development are not possible in isolation from development in other sectors. Co-ordination is necessary with all tiers of government and other involved parties. Maximum direct and indirect benefit must be derived from development in, for instance, education and training, job creation and the promotion of local democracy.

- **Environmental integrity**

It is necessary to ensure that the environment is considered and protected in all development activities. Appropriate protection of the environment must be applied, including if necessary even prosecution under the law. Sanitation services that have unacceptable impacts on the environment cannot be considered to be adequate.

- **Sanitation is about health**

Sanitation is far more than the construction of toilets, it is a process of improvements that must be accompanied by promotional activities as well as health and hygiene education. The aim is to encourage and assist people to improve their health and quality of life.

- **Sanitation is a community responsibility**

Improvements in health through improved sanitation are most likely to be achieved when the majority of households in a community are involved. Sanitation is therefore a community responsibility, and this must be emphasised through sanitation awareness programmes (National Sanitation Policy, 1996).

Water supply

South Africa has a substantial economy with a well-developed infrastructure. However, significant inequalities exist in both distribution and access to the infrastructure. This is particularly applicable to domestic water, one of the fundamental needs.

History has shown that clean water is the single most important factor in sustainable primary health, and consequently productivity and growth of the country. Obviously water resources have a strategic interdependence that surpasses local interests if the country as a whole is to function effectively.

Many changes have taken place in South Africa since the national elections of April 1994. One of the most profound changes to impact on the future role of the Department of Water Affairs and Forestry (DWAF) was the incorporation of the former homelands into the nine national provinces. This has had the effect of a more equitable resource disposition and a desire to redirect resources to the poorer communities. At the same time it has exposed deficiencies in administration. To correct this basic imbalance a major community water and sanitation supply programme is required. The DWAF has taken up this challenge and assumed a new role in the provision of community water supply and sanitation (CWSS).

Basic water supply is defined as:

- Quantity: 25 litres per person per day.
- Distance: the maximum distance that a person should have to cart water to his dwelling is 200m.
- Quality: the quality of water provided as a basic service should be in accordance with currently accepted minimum standards with respect to health-related chemical and microbial contaminants. It should also be acceptable to consumers in terms of its potability (taste, odour and appearance).
- Flow: the flow rate of water should not be less than 10 litres a minute.
- Reliability: water availability should not fail due to drought more than one year in fifty, on average (White Paper, 1994).

Sanitation problem and its impact

Approximately 21 million South Africans do not have access to adequate sanitation facilities. Those who have inadequate sanitation may be using the bucket system, unimproved pit toilets or the veld. Furthermore, there is a disturbing increase in poorly designed or operated waterborne sewerage systems. When these fail, the impact on the health of the community and others downstream, and the pollution of the environment are extremely serious.

Inadequate excreta disposal facilities, combined with unhygienic practices, represent South Africa's sanitation problem. Often the unhygienic practices are related to

- a lack of access to health and hygiene education,

- inadequate water supplies,
- poor facilities for the safe disposal of water and other domestic waste,
- inadequate toilet facilities (National Sanitation Policy, 1996).

The effects of the sanitation problem are threefold:

- **Health impact** - the impact of inadequate sanitation on the health of the poor is significant in terms of the quality of life, and the education and development potential of communities.

- **Economic impact** - poor health keeps families in a cycle of poverty and lost income. The national cost of lost productivity, reduced educational potential and curative health care is substantial.

- **Environmental effects** - inadequate sanitation leads to dispersed pollution of water sources. This in turn increases the cost of downstream water treatment, as well as the risk of disease for communities who use untreated water (National Sanitation Policy, 1996).

Implementation approach

"The absence of a coherent national programme to improve community sanitation has left an obvious legacy. Nearly half South Africa's population does not have, within their own homes, the healthy environment promised to them by the Constitution. There is a glaring need for a structured programme to address this problem" (National Sanitation Policy, 1996:28).

"Given the limited practical experience in the field and the evolving institutional arrangements at local level, such a programme must be flexible enough to develop and change over time. It must build on the lessons of experience and reinforce the role of local government as the implementers of service provision" (National Sanitation Policy, 1996:28).

"It is therefore proposed that there be an initial two-year start-up phase. During this period, there should be an increase in funding to sanitation to start a limited number of projects in all of the provinces. Existing pilot projects and research will continue, as will the development of the health and hygiene and capacity-building 'software'. The consultation process must also continue" (National Sanitation Policy, 1996:28).

Experience gained from these activities will then be used to design and launch a full-scale national programme that can meet the ambitious goals set for the sector of meeting the basic needs of all South Africans within ten years.

7.4.1 Access to sanitation facilities

Access to waterborne sewerage and septic tanks

For waterborne sewerage and septic tanks to be provided there must be running water available in the house. This does not mean that running water and waterborne sewerage or septic tanks will necessarily be provided simultaneously. The map shows that north-west, southern and mid-west districts of Mpumalanga have limited access to waterborne sewerage and septic tanks. In the north-western cluster, Groblersdal has the greatest access to waterborne sewerage and septic tanks.

Access to bucket and pit latrines

There is a relatively high provision of bucket and pit latrines in all the districts prioritised according to limited access to waterborne or septic tank sewerage systems. These cannot be upgraded as they are considered inadequate and are going to be phased out and replaced with adequate systems – at least a VIP latrine.

The three clusters mentioned above, Groblersdal included, have high percentage access. It should also be noted that most of the province has a 50% or more access to bucket and pit latrines. This means that a massive development intervention in this sector is required.

Conclusion

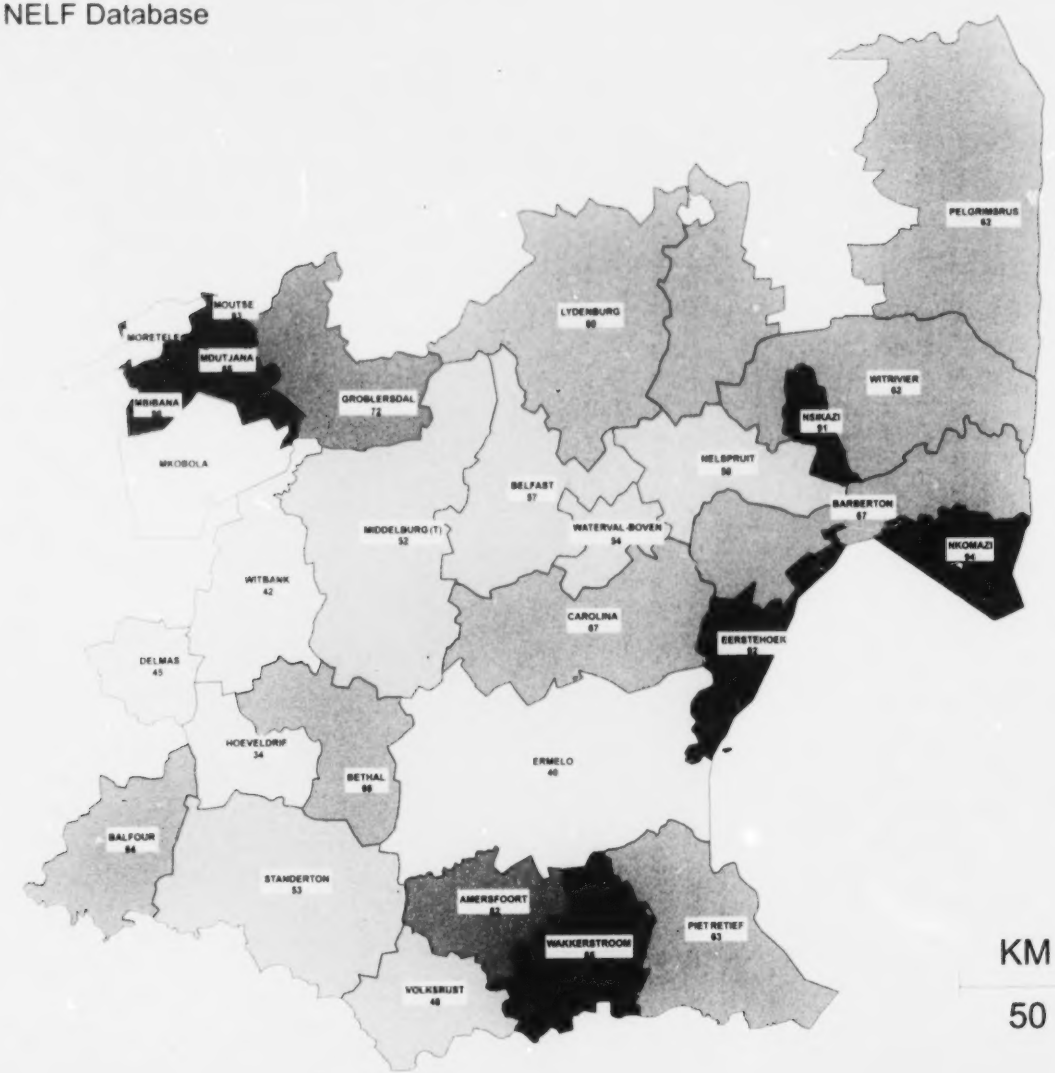
Regarding water provision, the following districts are important in terms of prioritisation: the former KwaNdebele and Boputhatswana districts clustered with Moutse, Groblersdal, Amersfoort and Wakkerstroom from the former Transvaal, as well as the former KaNgwane districts. Prioritisation for sanitation is the same as for water, but also includes the many districts that have a greater than 50% access to bucket and pit latrines.

B. O'Leary
GIS Unit
Human Sciences Research Council

MAP 14 : PERCENTAGE HOUSEHOLDS WITH ACCESS TO BUCKET AND PIT LATRINE FACILITIES

Source : NELF Database

HSRC
RGN
GIS UNIT



N

% bucket and pit

	34 to 46
	46 to 58
	58 to 70
	70 to 82
	82 to 94

KM

50

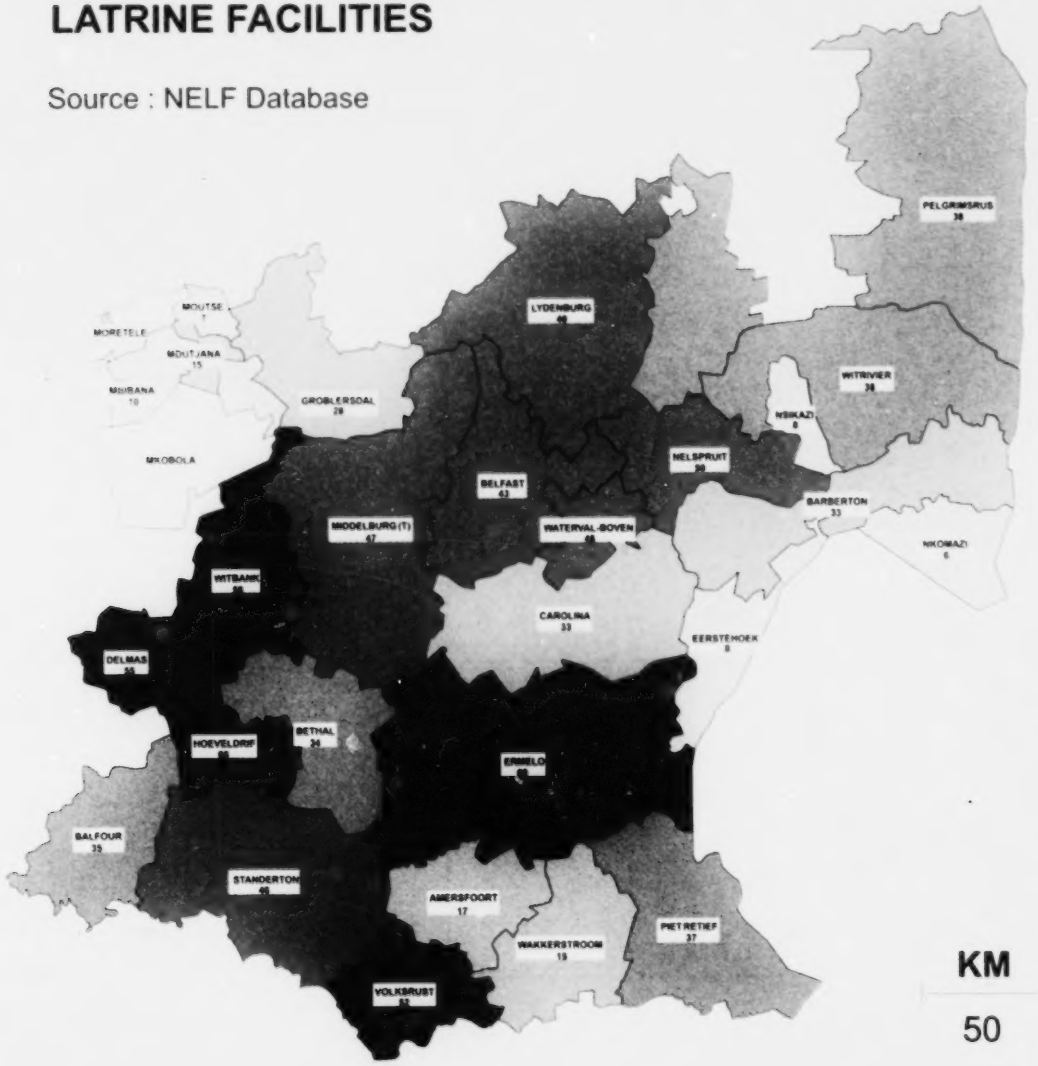
Table 14 Percentage households with access to bucket and pit latrine facilities

DISTRICTS	TOTAL HOUSEHOLDS	TOTAL HOUSEHOLDS WITH BUCKET LATRINES	TOTAL HOUSEHOLDS WITH PIT LATRINES	% HOUSEHOLDS WITH BUCKET AND PIT LATRINES
Amersfoort	6 197	188	4 917	82,4
Balfour	7 883	154	4 911	64,3
Barberton	17 865	231	11 736	67,0
Belfast	6 051	92	3 363	57,1
Bethal	12 952	402	8 100	65,6
Carolina	6 191	87	4 068	67,1
Delmas	9 205	212	3 893	44,6
Eerstehoek	45 789	182	41 939	92,0
Ermelo	24 020	342	9 283	40,1
Groblersdal	12 077	34	8 613	71,6
Hoëveldrif/ Highveld Ridge	31 999	1 043	9 736	33,7
Lydenburg	8 164	83	4 817	60,0
Mbibana	14 233	211	12 538	89,6
Mdutjana	23 750	227	20 061	85,4
Middelburg (M)	30 311	678	15 231	52,5
Mkobola	no data	no data	no data	no data
Moretele	no data	no data	no data	no data
Moutse	19 716	10	18 244	92,6
Nelspruit	17 803	69	8 889	50,3
Nkomazi	57 087	150	53 748	94,4
Nsikazi	65 779	679	59 502	91,5
Pelgrimsrus/ Pilgrim's Rest	7 503	78	4 583	62,1
Piet Retief	12 573	206	7 682	62,7
Standerton	17 823	311	9 216	53,5
Volksrust	6 276	250	2 771	48,1
Wakkerstroom	5 692	116	4 723	85,0
Waterval-Boven	2 129	53	1 089	53,6
Witbank	37 740	1 744	14 094	42,0
Witrivier/White River	8 173	58	5 038	62,4

MAP 15 : % HOUSEHOLDS WITH ACCESS TO SEPTIC TANK OR WATERBORNE LATRINE FACILITIES

Source : NELF Database

HSRC RGN GIS UNIT



N

KM

50

% waterborne and septic tank

	6 to 10
	10 to 33
	33 to 38
	38 to 50
	50 to 66

Table 15 · Percentage households with access to septic tank or waterborne latrine facilities

DISTRICTS	TOTAL HOUSEHOLDS	TOTAL HOUSEHOLDS WITH WATERBORNE SEWERAGE	TOTAL HOUSEHOLDS WITH SEPTIC TANKS	% HOUSEHOLDS WITH WATERBORNE SEWERAGE AND SEPTIC TANKS
Amersfoort	6 197	676	407	17,5
Balfour	7 883	2 134	663	35,5
Barberton	17 865	3 299	2 575	32,9
Belfast	6 051	2 005	568	42,5
Bethal	12 952	3 729	706	34,2
Carolina	6 191	1 356	664	32,6
Delmas	9 205	4 380	702	55,2
Eerstehoek	45 789	1 725	1 928	8,0
Ermelo	24 020	13 122	1 238	59,8
Groblersdal	12 077	1 736	1 684	28,3
Hoëveldrif/ Highveld Ridge	31 999	20 566	624	66,2
Lydenburg	8 164	2 369	880	39,8
Mbibana	14 233	1 110	365	10,4
Mdutjana	23 750	3 013	440	14,5
Middelburg (M)	30 311	13 021	1 355	47,4
Mkobola	no data	no data	no data	no data
Moretele	no data	no data	no data	no data
Moutse	19 716	993	461	7,4
Nelspruit	17 803	6 927	1 910	49,6
Nkomazi	57 087	1 300	1 880	5,6
Nsikazi	65 779	3 818	1 768	8,5
Pelgrimsrus/ Pilgrim's Rest	7 503	1 333	1 496	37,7
Piet Retief	12 573	3 059	1 613	37,2
Standerton	17 823	7 328	949	46,4
Volksrust	6 276	2 871	365	51,6
Wakkerstroom	5 692	547	296	14,8
Waterval-Boven	2 129	800	174	45,7
Witbank	37 740	21 055	823	58,0
Witrivier/White River	8 173	2 089	978	37,5

7.4.2 Access to water facilities

The data source for this provincial analysis was the NELF database developed by Eskom in 1994. The accuracy of this database has been questioned within Eskom. Its accuracy can, however, be tested by summing the percentages of households with access to in-house water, garden taps only, community taps only and no water supply. This should total 100%, and of the 12 districts in Mpumalanga 11 have percentage totals of over 99%. Data for Mkobola is not available.

On-site water provision

Households with running water in the house or in the garden only fall into this category. On the map all of the former black areas fall into the lowest percentage range of provision, that is between 9 and 21%. Moutse, adjacent to the former KwaNdebele districts, and Wakkerstroom in the south are former white Transvaal districts that are also in the lowest range.

If the lowest two ranges are considered then the map shows three clusters of districts with very low levels of on-site provision. In the north-west are a cluster of former KwaNdebele and Bophuthatswana districts as well as Moutse and Groblersdal from the old white Transvaal. In the south are the old Transvaal districts of Amersfoort and Wakkerstroom, and towards the mid-east are the KaNgwane districts.

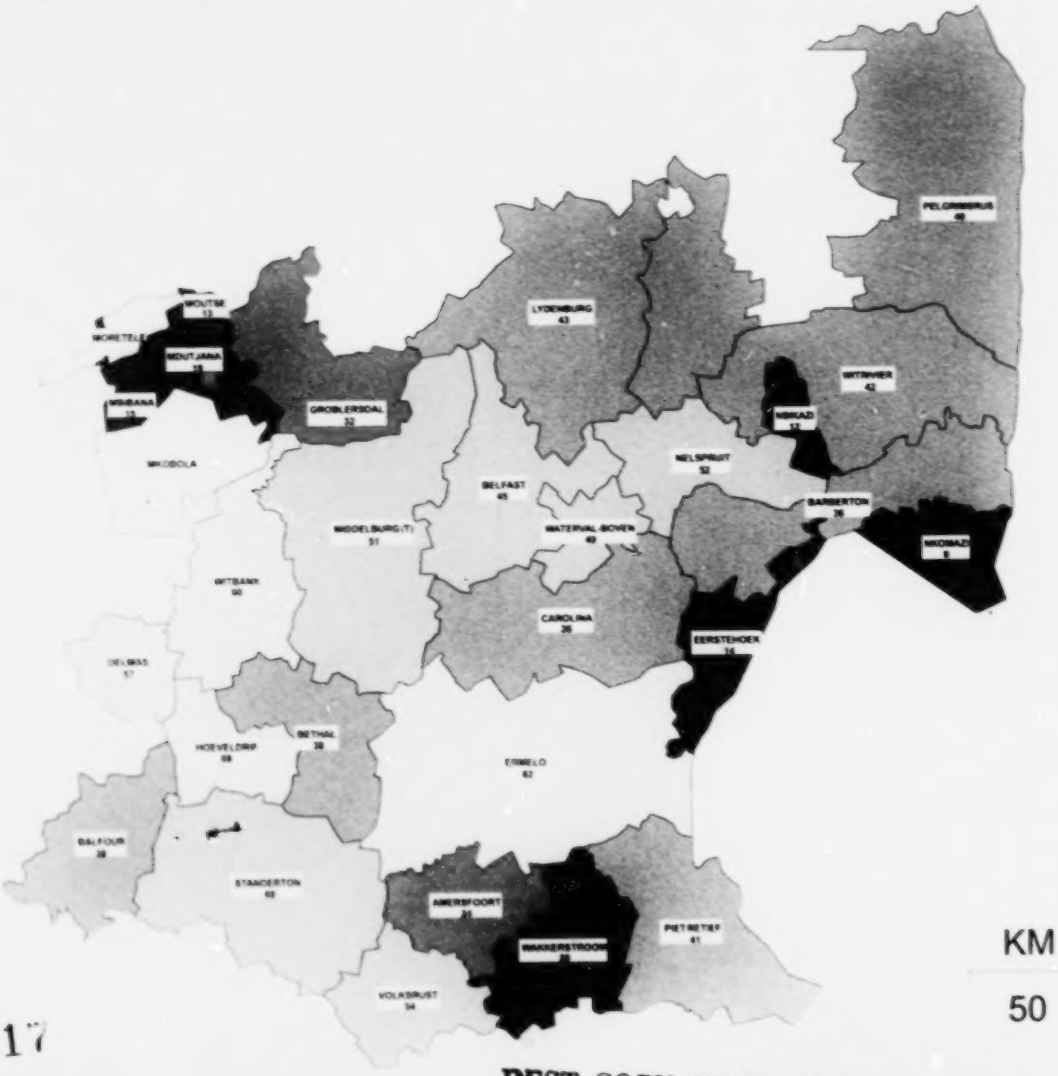
Off-site water provision

Households that access piped water from communal street taps fall into this category. As can be expected from the discussion on on-site provision, areas with low on-site provision in general correspond to areas of high off-site provision. The north-western, southern and mid-eastern peripheral clusters that had low on-site provision, have high levels of off-site provision. In these areas there are also high percentages of households with no access to water. A vast amount of work is required in these areas to extend provision from off-site to on-site and from no access to at least off-site provision.

MAP 16 : PERCENTAGE HOUSEHOLDS WITH ACCESS TO ON-SITE WATER FACILITIES

Source : NELF Database

HSRC
RGN
GIS UNIT



N

% on-site water

	9 to 21
	21 to 33
	33 to 44
	44 to 56
	56 to 68

KM

50

16

BEST COPY AVAILABLE

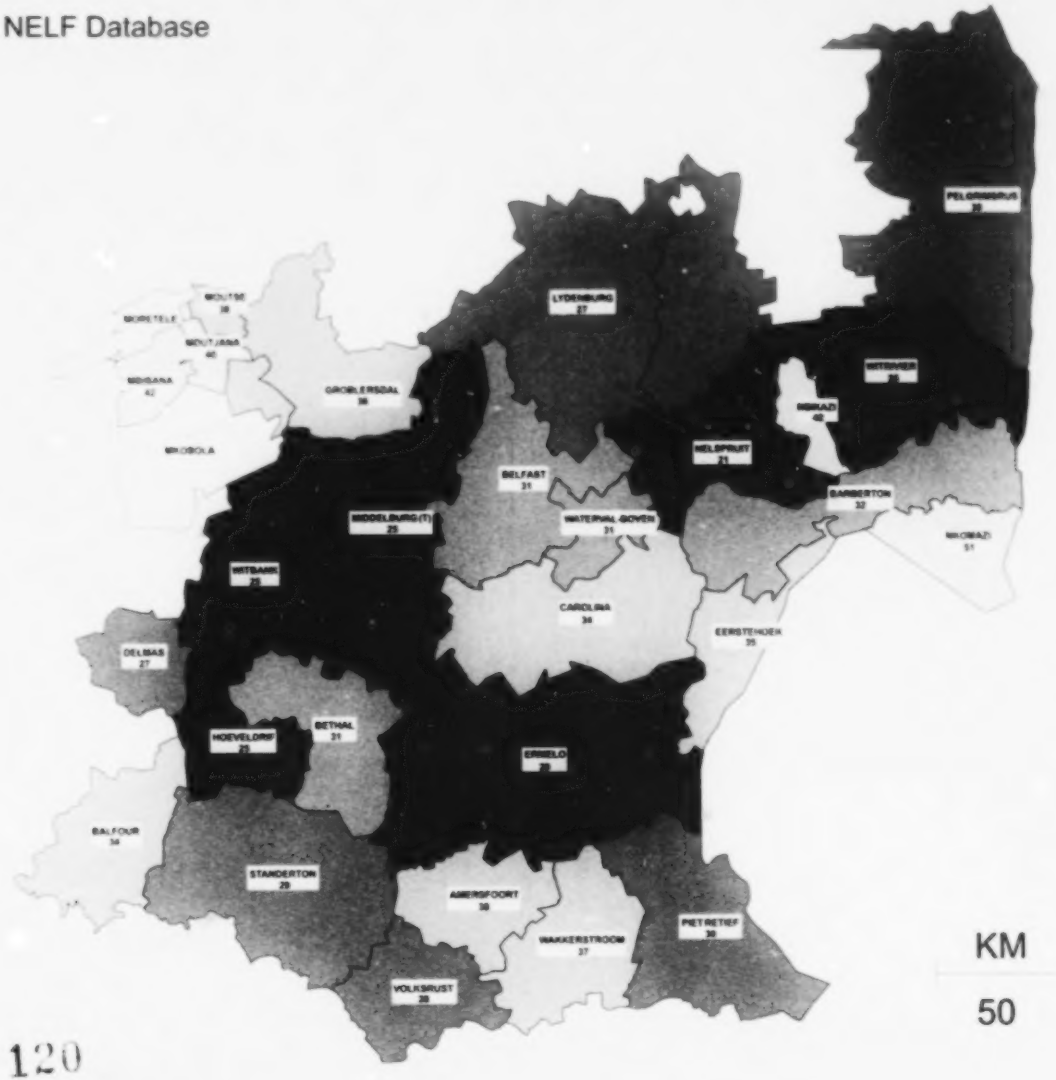
Table 16 Percentage households with access to on-site water facilities

DISTRICT	HOUSES	IN-HOUSE WATER	ON-SITE WATER	% IN-HOUSE AND ON-SITE WATER
Amersfoort	6 197	791	676	23,7
Balfour	7 883	1 582	1 450	38,5
Barberton	17 865	4 977	1 448	36,0
Belfast	6 051	2 161	572	45,2
Bethal	12 952	3 686	1 243	38,1
Carolina	6 191	1 563	690	36,4
Delmas	9 205	3 153	2 136	57,5
Eerstehoek	45 789	1 611	4 719	13,8
Ermelo	24 020	11 196	3 788	62,4
Groblersdal	12 077	2 773	1 035	31,5
Hoëveldrif/ Highveld Ridge	31 999	15 776	5 899	67,7
Lydenberg	8 164	2 580	964	43,4
Mbibana	14 233	707	1 431	15,0
Mdutjana	23 750	2 827	1 715	19,1
Middelburg (M)	30 311	12 298	3 017	50,5
Mkobola	no data	no data	no data	no data
Moretele	no data	no data	no data	no data
Moutse	19 716	896	1 656	12,9
Nelspruit	17 803	6 957	2 380	52,4
Nkomazi	57 087	1 237	3 902	9,0
Nsikazi	65 779	3 411	4 719	12,4
Pelgrimsrus/ Pilgrim's Rest	7 503	2 546	458	40,0
Piet Retief	12 573	4 344	842	41,2
Standerton	17 823	7 154	1 651	49,4
Volksrust	6 276	2 758	644	54,2
Wakkerstroom	5 692	568	566	19,9
Waterval-Boven	2 129	927	113	48,8
Witbank	37 740	19 389	3 361	60,3
Witrivier/White River	8 173	2 765	647	41,7

MAP 17 : PERCENTAGE HOUSEHOLDS WITH ACCESS TO OFF-SITE WATER FACILITIES

Source : NELF Database

HSRC
RGN
GIS UNIT



KM

50

N

% off-site water

	20	to	25
	25	to	30
	30	to	32
	32	to	38
	38	to	51

Table 17 Percentage households with access to off-site water facilities

DISTRICT	HOUSES	TOTAL HOUSEHOLDS WITH OFF-SITE WATER	% HOUSEHOLDS WITH OFF-SITE WATER
Amersfoort	6 197	2 355	38,0
Balfour	7 883	2 705	34,3
Barberton	17 865	5 701	31,9
Belfast	6 051	1 896	31,3
Bethal	12 952	4 056	31,3
Carolina	6 191	2 083	33,6
Delmas	9 205	2 506	27,2
Eerstehoek	45 789	15 989	34,9
Ermelo	24 020	4 791	19,9
Groblersdal	12 077	4 292	35,5
Hoëveldrif/ Highveld Ridge	31 999	7 919	24,7
Lydenberg	8 164	2 221	27,2
Mbibana	14 233	5 976	42,0
Mdutjana	23 750	9 458	39,8
Middelburg (M)	30 311	7 555	24,9
Mkobola	no data	no data	no data
Moretele	no data	no data	no data
Moutse	19 716	7 518	38,1
Nelspruit	17 803	3 780	21,2
Nkomazi	57 087	29 224	51,2
Nsikazi	65 779	27 613	42,0
Pelgrimsrus/ Pilgrim's Rest	7 503	2 278	30,4
Piet Retief	12 573	3 778	30,0
Standerton	17 823	5 135	28,8
Volksrust	6 276	1 740	27,7
Wakkerstroom	5 692	2 121	37,3
Waterval-Boven	2 129	663	31,1
Witbank	37 740	9 348	24,8
Witrivier/White River	8 173	2 078	25,4

7.5 Electricity

Introduction

Experience in other countries shows that substantial economic growth is not achieved until the large majority of the population has access to electricity. Electrification and economic growth go hand in hand. This does not mean that introducing electricity to an underserviced area without other social and infrastructural services is going to positively influence "rural-urban migration, population growth, education and literacy. It is only in countries such as the USA where broad rural development and employment programmes, in conjunction with electrification, have significantly improved the rural quality of life and reduced rural to urban migration" (Golding, 1992:2).

"Eskom has accelerated its electrification thrust over the past two years and its programme is on target. Eskom has electrified 639 741 homes since the electrification drive began at the end of 1990. This programme will positively affect the lives of more than eleven million people, giving them access to a clean, affordable and convenient source of energy and allowing them to become part of a modern industrially developing society" (Maree, 1995:3).

The electrification project

The electrification project began in 1990 in order to bring the benefits that access to electricity brings to more South Africans.

"In 1992 a survey was conducted in South Africa to determine the status of electrification in cities and towns, in trust areas, and in TBVC countries and national states. It was revealed that out of a total of 7,2 million homes, only 3 million were at that stage provided with electricity. This left an enormous 4,2 million homes without, only about 2 million of which could possibly be furnished cost effectively with electricity. The remainder would be difficult to electrify due to either the structure of the dwelling, the distance from the existing grid, lack of access to alternative energy sources, or simply as a matter of affordability" (The electrification project, 1995:1).

Once it was agreed that little economic growth could occur without the widespread use of electricity, Eskom committed itself to the electrification of almost one million homes over the following five years, in areas where it had the right to supply. Given the economic recession, the time was ripe to put innovative technology to the test. Eskom decided to follow the route of the "prepayment meter or electricity dispenser" (The electrification project, 1995), which had been used successfully in other countries.

Electricity supplies in rural areas

Both dense and scattered rural settlements, which are located primarily in former homeland areas, have exceptionally low levels of access to electricity.

Furthermore, demographic and electrification data concerning farm workers on commercial farms appear to be inadequate to support electrification planning.

"Many of the homes still needing electricity are situated far from the national grid in remote rural areas with a low-density population. At present only 12% of rural households have access to electricity. Eskom's electrification programme will raise this figure to 30% in 1999 and will have a positive effect on the quality of life. The cost of bringing network electricity to such areas will be very high. Eskom is constantly researching ways to substantially reduce the cost of rural electrification through appropriate technology" (Morgan, 1995:7).

Eskom and the RDP

Following the adoption of the Reconstruction and Development White Paper by parliament, Eskom published ten commitments demonstrating its support of the RDP. Many of these activities were already under way in the organisation and therefore reflect a change in degree rather than direction for Eskom.

Eskom undertook the following:

- Further reduce the real price of electricity by 15%, so as to become the world's lowest cost supplier of electricity
- Electrify an additional 1 750 000 homes, improving the lives of 11 million South Africans
- Change the staffing profile, so that 50% of management, professional and supervisory staff would be black South Africans
- Educate, train and upgrade sufficient numbers of people to meet Eskom's future managerial, technical and other professional staff needs, *inter alia* by employing 370 black trainees and bursars per year, and enabling all Eskom employees to become literate
- Maintain transparency and engage in worker consultation in decision making
- Contribute R50 million per year to electrification of schools and clinics, and other community development activities, particularly in rural areas
- Enable all Eskom employees to own a home
- Encourage small and medium enterprise development, through Eskom's buying policies and giving of managerial support
- Protect the environment
- Finance the above from own resources and from overseas development funding (Morgan, 1995)

National electrification planning - resources and institutions

"There is no national institution capable of co-ordinating and planning the national electrification programme. At present, planning takes place within each distribution agency, and Eskom assumes responsibility for the bulk of the connections targeted annually. Many municipal distributors have embarked on electrification programmes and conduct in-house planning. However, there is no overall national co-ordination of these activities, and no mechanism to

ensure that the targets set by the RDP will be met. Eskom dominates planning for the electrification programme and its implementation, but has no jurisdiction in regions outside its supply areas. The National Electricity Regulator may be in a position to fill this institutional vacuum, but at present has limited capacity to monitor progress or to undertake detailed planning" (Davis, 1996: 477).

"Resources are also limited. Despite improvements over the past few years, there are large inadequacies in the data for many areas of the country. Eskom has begun to refine the demographic and electrification data, but is likely to concentrate on its own areas of supply. It will be some time before these data resources are developed to a point where accurate supply-side and demand-side information is available for the many municipal distributors around the country" (Davis, 1996: 477).

"Despite the limitations, national electrification targets have been set, at least until the year 2000, and the success of the programme will inevitably be judged in relation to these targets. But are national targets desirable? Although they have succeeded in increasing the rate of electrification, they favour a centralised planning and implementation system. But not only does centralised planning require extensive resources, it also affects the process of electrification and the ability of communities to participate in it effectively. The alternative approach is decentralised and demand-driven, with control over investment decisions located at lower tiers. Under this system, there is less need for a national planning institution. Instead more emphasis is placed on the need to monitor progress and provide adequate support to lower-tier organisations" (Davis, 1996: 477).

NELF and the regulator

"The National Electrification Forum (NELF) has completed the majority of its work and made an initial recommendation to Government that the distribution sector of the industry should be rationalised, national tariff systems should be implemented and that a national electricity regulatory authority should be established to oversee the industry. The result will be that many local governments will retain the right of supply in their areas. The National Electricity Regulator (NER) will be responsible for licensing all suppliers and ensuring that they perform to set standards" (Morgan, 1995:13).

This means that Eskom will have to be licensed and in future will be subject to regulatory jurisdiction. Also, Eskom will become responsible for supplies in large areas of the previous TBVC states and self-governing territories, while possibly handing over staff and assets in some urban areas where it is presently operative.

Community relations

Small business development and job creation

"The electrification programme provides employment for over 4 000 people involved in construction: 2 200 from Eskom and the balance as contractors employed by Eskom. In addition, about 2 300 people are employed in the local manufacturing industry to provide the materials required. Over a thousand people are employed in marketing, maintenance and administration functions in newly electrified areas. Where possible, Eskom uses subcontractors from small businesses in underdeveloped and electrification areas. Training programmes aim at employing members from the local community. Capital development projects affected more than a million people in 1994" (Morgan, 1995:11).

Community development

"Eskom actively promotes community development through programmes designed to assist disadvantaged communities with a strong emphasis on education. Only projects at grassroots level with community support and accountability are supported. Over the past four years funding has risen from R4 million to approximately R40 million annually" (Morgan, 1995:12).

"In support of the electrification programme and Eskom's RDP commitments, Eskom increased its community development contribution by electrifying 562 schools and 21 clinics in 1994. During 1994, the Norwegian Agency for Development Co-operation pledged R15,2 million in grant funding for the electrification of schools and clinics" (Morgan, 1995:12).

7.5.1 Electrification of formal housing

The map indicates that in the lowest range of provision (17 to 34%) of electricity to formal houses there are five districts. Four of these are former black districts: Mbibana (30%), Mdutjana (33%), Eerstehoek (33%) and Nkomazi (33%). In the second lowest range (34 to 50%) there are two districts. One is Nsikazi, a former black district, having 38% provision. In these lower two ranges are two former white districts, Amersfoort and Waterval-Boven having 17% and 45%, respectively. Moretele, a former Bophuthatswana district, has 56% provision and falls into the middle range. All the former black districts and only two former white districts fall into the lower ranges of provision.

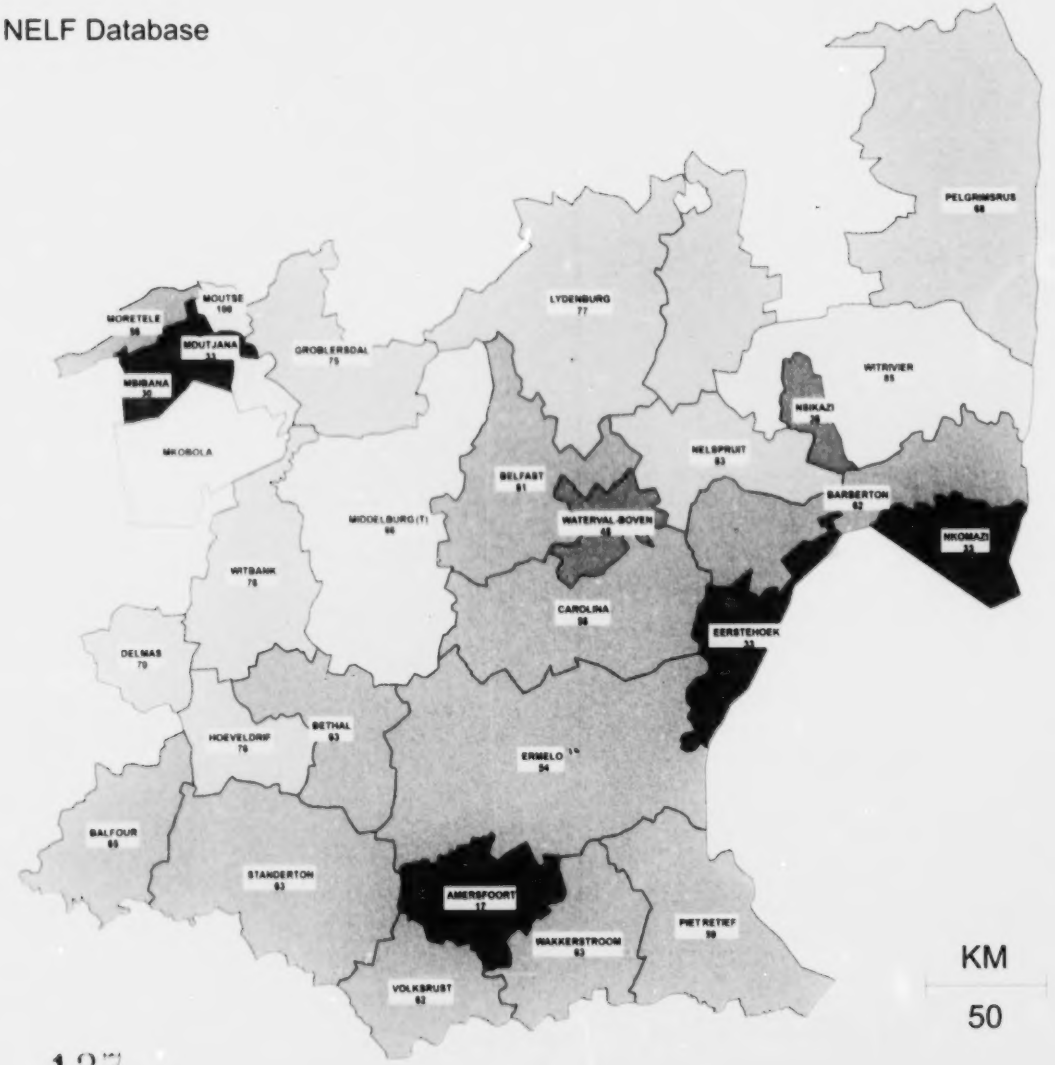
The districts in the top two ranges (67 to 100%) are located along the northern and eastern borders of the province. This excludes the former KwaNdebele and Bophuthatswana districts in the north-west. Moutse, a former white district, adjacent to KwaNdebele has 100% provision. This figure should be questioned as the data indicated a higher number of electrified formal houses than total formal houses and had to be adjusted back to 100%. Apart from the clear under-provision in former black areas, there is clearly a higher level of provision in the north and west, compared with the central and southern districts.

D. Sterley
Eskom

MAP 18 : PERCENTAGE FORMAL HOUSES ELECTRIFIED

HSRC RGN GIS UNIT

Source : NELF Database



KM

50

N

% electrified formal houses

	17 to 34
	34 to 50
	50 to 67
	67 to 83
	83 to 100

BEST COPY AVAILABLE

Table 18 Percentage formal houses electrified

DISTRICT	TOTAL ELECTRIFIED FORMAL HOUSES	TOTAL SERVICE POINTS	% ELECTRIFIED HOUSES
Amersfoort	482	2 795	17,2
Balfour	2 139	3 295	64,9
Barberton	7 214	11 712	61,6
Belfast	2 234	3 640	61,4
Bethal	4 510	7 185	62,8
Carolina	1 690	2 998	56,4
Delmas	3 241	4 606	70,4
Eerstehoek	1 881	5 769	32,6
Ermelo	7 685	14 216	54,1
Groblersdal	4 478	5 968	75,0
Hoëveldrif/ Highveld Ridge	14 826	19 631	75,5
Lydenburg	3 523	4 577	77,0
Mbibana	626	2 072	30,2
Mdutjana	1 905	5 753	33,1
Middelburg (M)	15 472	17 901	86,4
Mkobola	no data	no data	no data
Moretele	866	1 552	55,8
Moutse	1 247	1 247	100,0
Nelspruit	9 791	11 726	83,5
Nkomazi	1 554	4 722	32,9
Nsikazi	4 948	13 067	37,9
Pelgrimsrus/ Pilgrim's Rest	4 137	6 052	68,4
Piet Retief	4 409	7 425	59,4
Standerton	6 508	10 405	62,5
Volksrust	2 509	4 055	61,9
Wakkerstroom	1 045	1 669	62,6
Waterval-Boven	695	1 536	45,2
Witbank	21 599	28 577	75,6
Witrivier/White River	4 426	5 195	85,2

7.5.2 Electrification of informal housing

The map shows that all the former black areas fall into the lowest range of between 1 and 9%. The districts in the second lowest range are in the west and south. The districts in the middle range form a region that runs in an east-west direction and curves down to the south-west. The districts in the top range (34 to 42%) are in the north, while those in the second highest range are split on either side of the middle range. Most of the districts have less than 25% provision.

Nearly half the houses in the province are informal. All districts have less than 50% provision for informal housing when compared with formal houses where three-quarters of the districts exceed a 50% provision of electricity. The greatest backlog is therefore in informal housing throughout the province and worst off are the former KwaNdebele, KaNgwane, Bophuthatswana districts as well as those of Delmas, Highveld Ridge and Amersfoort.

Current electrification programmes

The current electrification programme focuses mostly on the former black areas as the former white areas are almost 100% electrified. The former black areas are on average 40,3% electrified and there are still 335 649 formal and informal households to be connected at a cost of R923 million.

Table 18a Households electrified, potential remaining and financial impact

DISTRICT	STANDS	TOTAL H/HOLDS	H/HOLDS ELECTR.	H/HOLDS TO BE ELECTR.	FIN. IMPACT	% ELECTR.
KWANDEBELE	122 132	115 330	81 974	33 356	100 068 000	71,1
KANGWANE	165 412	65 412	32 163	133 249	315 488 781	49,2
MOUTSE	33 656	31 619	29 413	2 206	6 618 000	93,0
BUSHBUCKRIDGE	92 260	92 260	26 002	66 258	198 774 000	28,2
TPA	5 200	5 200	2 435	2 765	8 295 000	46,8
HIGHVELD RSC	29 260	41 217	24 480	16 737	50 211 000	59,4
EASTVAAL RSC	68 877	93 301	25 163	68 138	204 414 000	27,0
LOWVELD RSC	7 257	8 635	2 685	5 950	17 850 000	31,1
FARM WORKERS	9 000	9 000	2 010	6 990	20 970 000	22,3
TOTAL	**533 054**	**561 974**	**226 325**	**335 649**	**922 688 781**	**40,3**

ABOVE STATISTICS EXCLUDE THE TRADITIONAL WHITE AREAS WHICH ARE VIRTUALLY 100% ELECTRIFIED

The current programme as reflected in the table above takes into account all black households regardless of whether they were in a formerly black or white administered district.

The analysis of the NELF data on electrified informal and formal housing suggested that the backlog was greatest in the former KwaNdebele, KaNgwane, Bophuthatswana districts as well as those of Delmas, Highveld Ridge and Amersfoort. The highest cost for full electrification would be incurred in Kangwane. The second highest would be in the east including the districts of Delmas, Highveld Ridge and Amersfoort. The third would be Bushbuckridge which falls just outside the Mpumalanga border close to Kuduspruit, but is in the Pilgrim's Rest district. Farm workers throughout the province have very low provision at 22%.

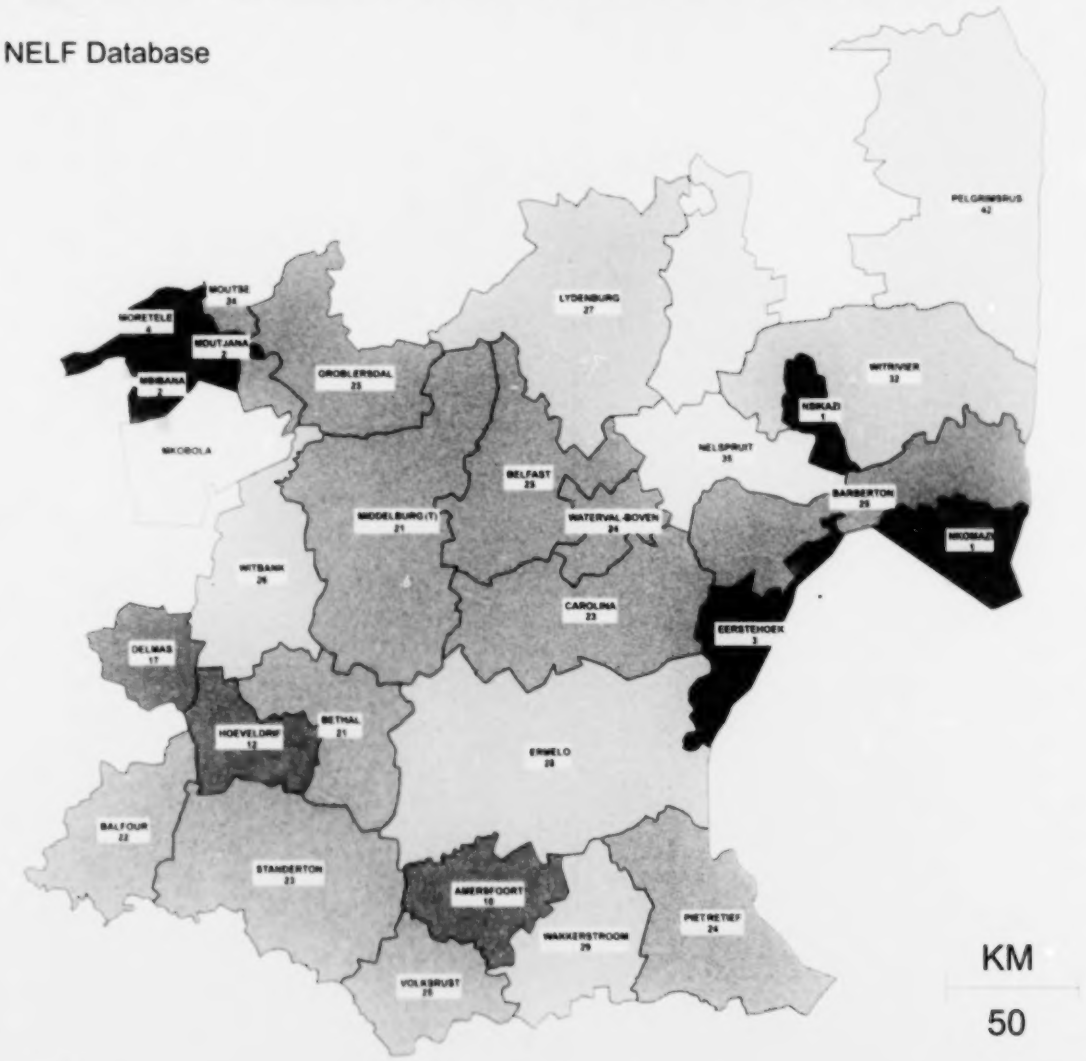
Moutse was previously identified as having 100% electrified formal housing and 24% electrified informal housing. The current programme is 93% completed for all housing types in Moutse. KwaNdebele at 71% has the second highest level of provision and the Highveld RSC at 59% has the third highest level.

D. Sterley
Eskom

MAP 19 : PERCENTAGE INFORMAL HOUSES ELECTRIFIED

HSRC RGN GIS UNIT

Source : NELF Database



N

% electrified informal houses

	1 to 9
	9 to 17
	17 to 26
	26 to 34
	34 to 42

Table 19 Percentage informal houses electrified

DISTRICT	TOTAL ELECTRIFIED INFORMAL HOUSES	TOTAL SERVICE POINTS	% ELECTRIFIED HOUSES
Amersfoort	351	3 372	10,4
Balfour	838	3 836	21,8
Barberton	1 289	5 175	24,9
Belfast	541	2 155	25,1
Bethal	853	4 143	20,6
Carolina	644	2 817	22,9
Delmas	760	4 478	17,0
Eerstehoek	149	5 881	2,5
Ermelo	2 559	9 218	27,8
Groblersdal	1 194	4 732	25,2
Hoëveldrif/ Highveld Ridge	1 434	11 962	12,0
Lydenburg	594	2 216	26,8
Mbibana	103	5 030	2,0
Mdutjana	101	4 740	2,1
Middelburg (M)	1 695	8 061	21,0
Mkobola	no data	no data	no data
Moretele	634	17 746	3,6
Moutse	1 261	5 293	23,8
Nelspruit	1 397	3 991	35,0
Nkomazi	363	33 930	1,1
Nsikazi	287	19 664	1,5
Pelgrimsrus/ Pilgrim's Rest	469	1 109	42,3
Piet Retief	1 122	4 699	23,9
Standerton	1 546	6 631	23,3
Volksrust	535	2 135	25,1
Wakkerstroom	1 172	3 986	29,4
Waterval-Boven	119	500	23,8
Witbank	1 807	6 942	26,0
Witrivier/White River	633	1 968	32,2

7.6 Roads

Introduction

"Like so much else in our country, South Africa's road infrastructure is an amalgam of both First World and Third World standards. The national and main road structures have played a very significant part in the economic development of the country over the last 40 years and are destined to play an even more important part in the future. At the same time there are large sectors of the rural community that are inadequately served by roads. This is a situation which must be addressed as a matter of urgency if we are to achieve the planned levels of social and economic development" (A Future for Roads in South Africa, 1996:1).

South Africa's roads carry between 80% and 90% of all passenger and freight movements in the country. Despite their critical function there is a serious lack of funds for their maintenance and development.

Role of roads in development

"A good road (transport) system has been identified as the second most important catalyst in a country's social and economic development (after education). A former administrator of the USA Federal Highway administration stated: 'It was not our wealth which made our good roads possible, but rather our good roads which made our wealth possible.' This is an important message for South Africa which underlines the need for urgent and determined actions to be taken to preserve and, where necessary, improve our road network in the interests of social and economic development in South Africa" (A Future for Roads in South Africa, 1996:3).

Transport, especially road transport, is central to development for without physical access to jobs, health, education and other amenities quality of life suffers. Without physical access to resources and markets, growth stagnates and poverty reduction cannot be sustained.

"An adequate road system plays a major role in the economic and societal health of a country. Therefore, such a road system should receive an appropriate and stable level of investment in order to establish and maintain the system. Also it should be effectively and efficiently managed to obtain the maximum return on scarce financial and physical resources" (A Future for Roads in South Africa, 1996:3).

Road network classification

"Roads and streets constitute the necessary communication links which provide adequate support for economic growth and which must satisfy the basic accessibility needs, i.e. the ability to be reached, and conversely, the basic mobility needs i.e. the ability to move, or be moved, easily, quickly and efficiently, of the population" (A Future for Roads in South Africa, 1996:7).

It is important to determine a suitable and encompassing classification for roads. Such an approach would classify roads by recognising the authorities primarily responsible for their provision, as well as the functionality of the different elements of the total network.

The classification is as follows:

- **National roads**

"The authority primarily responsible is the South African Roads Board. These roads provide mobility in a national context. Traffic on these roads is usually associated with longer travel distances and the design of the roads should make provision for relatively high speeds, and interference with through traffic should be minimised. These roads are provided primarily for economic reasons. They are regarded as strategic economic assets vital to the ability of the country to support and improve economic growth through industrial development and exports" (A Future for Roads in South Africa, 1996:7).

- **Provincial roads**

"The authorities primarily responsible are the provincial Departments of Transport and in some cases Public Works. Provincial roads are primarily provided for access and mobility in a regional context. These roads are designed for shorter travel distances and moderate speeds. Such roads usually form the links between towns not situated on the national road network" (A Future for Roads in South Africa, 1996:7).

- **Urban roads**

The authorities primarily responsible are city or local authorities. Urban roads are provided for mobility in urban areas.

"Although the provision of urban streets and roads is generally financed through local rates and taxes, the national and provincial road authorities do accept responsibility for certain national and provincial roads in urban and metropolitan areas to ensure route continuity. The Johannesburg outer ring road is such an example" (A Future for Roads in South Africa, 1996:9).

Classifying roads according to road user needs

"Roads satisfy various needs of the road user such as, for example, enhanced mobility. This they will do to a greater or lesser extent depending on their level of serviceability, which provides benefits of comfort, convenience, speed, safety and economy of travel. Many of the maintenance and upgrading activities performed within the roads budget are aimed at increasing serviceability. By far the greater part of the benefits that they produce will accrue exclusively to the road using public. Accordingly, it must be questioned whether the general taxpaying public should be required to pay for such improvements from the State Revenue Fund" (A Future for Roads in South Africa, 1996:22).

Other needs, *inter alia*, include, firstly, that like other forms of government activity in a market-oriented mixed economy such as South Africa's, roads must be economically efficient. This requires that the scarce resources available for

roads must be allocated to satisfy the greatest demands. This requires road provision to be sensitive to market signals.

"Road provision must also be equitable. There are a number of facets to this requirement. It may be more expensive to build and maintain roads under particular climatic or topographical conditions than others, so that regions exhibiting difficult conditions may warrant subsidisation by others more fortunately placed. Economically disadvantaged regions of the country may need to receive special development efforts. Furthermore, a balance must be maintained between the provision of roads and the supply of public transport. This is so that the disadvantages experienced by social groups without regular access to private motor vehicles are not exacerbated" (A Future for Roads in South Africa, 1996:22).

Finally, road provision must satisfy certain strategic requirements, for example, access to certain development regions must be secured, and the quality of life in rural areas improved in order to prevent their depopulation.

There is a trade off between these goals, and different groups within society at large may be held responsible for providing the funds needed for their satisfaction.

"In particular, the user pays approach to funding is appropriate to the goals of economic efficiency and increased serviceability required by the higher order roads, such as the national road network. By contrast, the goal of equity and provision of basic access implies that some users at least are not able to pay. Funding out of general tax revenue is thus required to satisfy this goal, as well as that of meeting strategic objectives where the road using public is not the beneficiary. Finally, user charging might need to be combined with subsidisation out of general revenue in order to satisfy the goal of environmental compatibility" (A Future for Roads in South Africa, 1996:22).

Road funding is a heterogeneous activity. Different road maintenance and improvement activities will satisfy different needs, and only in some cases will significant advantages accrue to the public at large. In other cases, benefits are experienced exclusively by road users, and can and should be "sold" to them like any other commodity.

Policy implications

The road network in South Africa faces a crisis. For many years now financial allocations from the Exchequer have been inadequate to meet the recurring needs of necessary maintenance, let alone provide much-needed rehabilitation, improvement and expansion of the network to cater for the rapidly growing demands on the network.

"The main provisions to address the undesirable situation in respect of the road network are institutional and financial. They relate to the institutional framework within which the national road network is managed; an inadequate flow of funds; inadequate conditions of employment to attract sufficient numbers of

experienced road engineers and technicians; lack of clearly defined responsibilities; inadequate management systems; and a lack of managerial authority and accountability. Roads are managed like a bureaucracy, not a business. Managers simply do not have the funds or incentives to use resources efficiently – nor are they penalised for poor performance" (A Future for Roads in South Africa, 1996:33).

Solving these problems requires fundamental changes in the way governments manage, and especially finance their networks, particularly the national networks that are provided primarily for economic reasons.

"The key concept for this level of roads which is emerging in many countries throughout the world is commercialisation, that is bringing the higher order roads into the market place, putting them on a fee-for-service basis and managing them like any other business enterprise. However since roads are a public monopoly, and likely to remain in government hands, commercialisation requires complementary reforms in other areas" (A Future for Roads in South Africa, 1996:33).

Such reforms include

- involving the road user in the management of roads to win public support for more road funding, to control potential monopoly power and to constrain road funding to what is affordable;
- establishing a clear organisational structure to place the delivery of the national road programme outside the hands of the bureaucracy;
- securing an adequate and stable flow of funds and introducing secure arrangements to channel these funds to the road agency, and
- strengthening the management of roads by providing effective systems and procedures and strengthening managerial accountability.

"There is a strong case for the re-introduction of a dedicated fund for the national road system. The income to the fund needs to be generated by a levy on fuel as well as by loan funds, redeemed by road tolls. For the provincial and urban roads, where a significant increase in funding levels is also urgent, it appears appropriate that the financial sources should comprise vehicle licenses (greatly increased in magnitude) and annual appropriations from the Exchequer" (A Future for Roads in South Africa, 1996:33).

7.6.1 Access to road infrastructure

National, main and tertiary road lengths were calculated for each magisterial district. The length of road (km) within a district was divided by the district area (km^2). The map shows that the highest density of roads is clustered in the mid-west and includes the Delmas, Witbank, Highveld Ridge and Bethal districts. These four districts are in the two upper ranges of 0,37 to 0,53 km/km^2, with Delmas having the highest density of 0,53 km/km^2.

The mid range of 0,3 to 0,37 km/km^2 has three clusters adjacent to the high density mid-west cluster. In the north-west is the Mdutjana-Moutse cluster, to the

north-east the Belfast-Middelburg cluster and in the south-east the Balfour-Standerton-Amersfoort-Volkrust cluster. In general, the upper three ranges are clustered in the west of the province with the exception of Nsikazi.

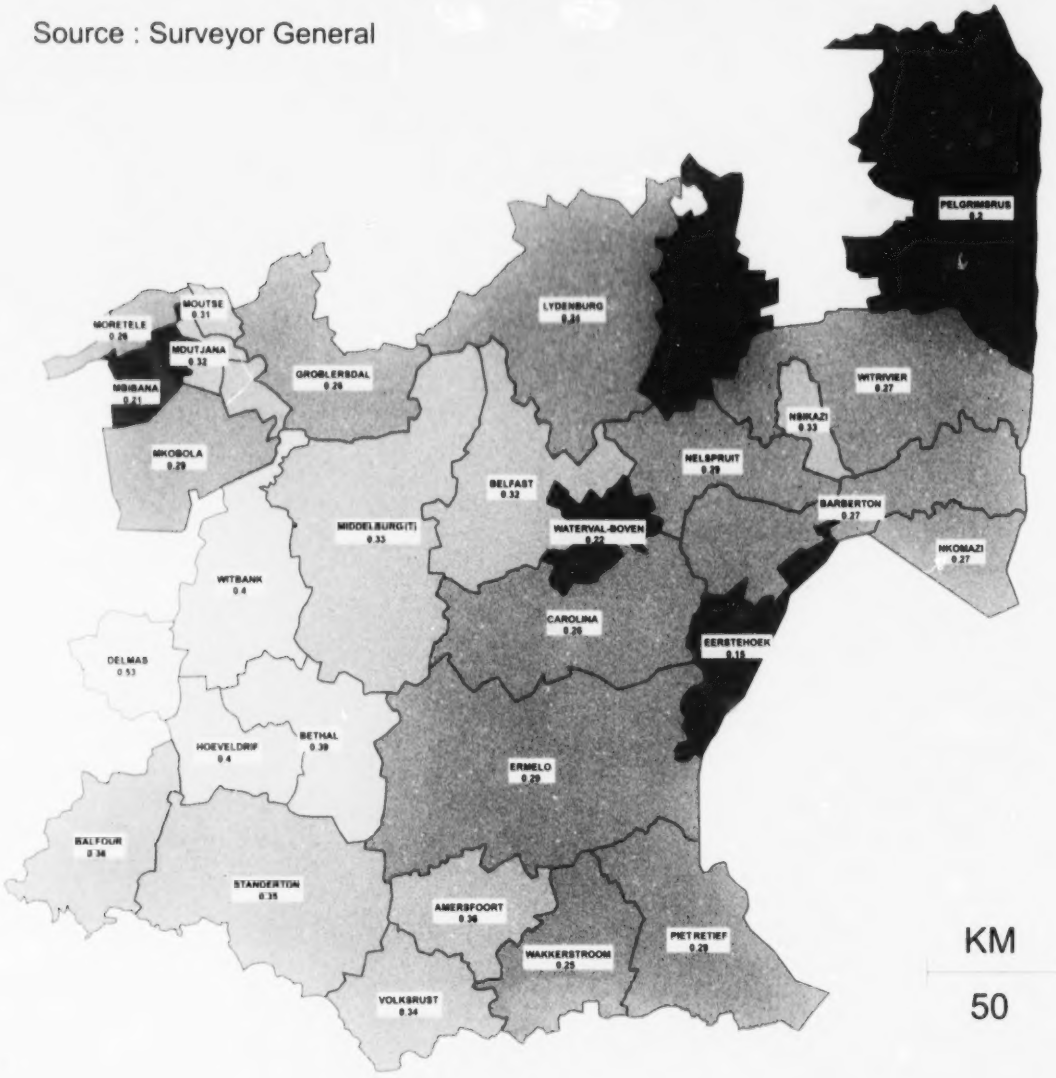
The lower two ranges of 0,15 to 0,3 km/km² occur in districts clustered in the eastern half of the province. The exceptions are found in the north-west and include Moretele, Mbibana, Mkobola and Groblersdal. Five of the 7 former black districts and 11 of the former 22 white districts fall into the lower two ranges, that is 71% of former black areas and 50% of former white areas fall. All five former black areas in the lower two ranges have population densities of over 33 persons/km² The 11 former white districts have population densities of less than 27 persons/km². The population pressure on roads in the districts in the lower two ranges is therefore greater in the former black districts.

B. O'Leary
GIS Unit
Human Sciences Research Council

MAP 20 : LENGTH OF ROADS PER SQUARE KILOMETRE

Source : Surveyor General

HSRC
RGN
GIS UNIT



N

Length per km

,15 to ,22	
,22 to ,30	
,30 to ,37	
,37 to ,45	
,45 to ,53	

Table 20 Length of roads per square kilometre

DISTRICT	LENGTH OF ROADS (KM)	AREA (KM²)	LENGTH PER KM²
Amersfoort	643	1 805	0,36
Balfour	813	2 237	0,36
Barberton	928	3 385	0,27
Belfast	981	3 085	0,32
Bethal	911	2 357	0,39
Carolina	990	3 858	0,26
Delmas	623	1 175	0,53
Eerstehoek	221	1 523	0,15
Ermelo	2 100	7 328	0,29
Groblersdal	684	2 655	0,26
Hoëveldrif/Highveld Ridge	598	1 493	0,40
Lydenburg	1 253	5 229	0,24
Mbibana	156	755	0,21
Mdutjana	120	371	0,32
Middelburg (M)	1 898	5 695	0,33
Mkobola	629	2 147	0,29
Moretele	157	594	0,26
Moutse	219	699	0,31
Nelspruit	656	2 267	0,29
Nkomazi	382	1 393	0,27
Nsikazi	197	600	0,33
Pelgrimsrus/Pilgrim's Rest	1 877	9 452	0,20
Piet Retief	1 098	3 734	0,29
Standerton	1 608	4 633	0,35
Volksrust	643	1 875	0,34
Wakkerstroom	579	2 323	0,25
Waterval-Boven	213	965	0,22
Witbank	1 099	2 753	0,40
Witrivier/White River	1 208	4 393	0,27

7.7 Telecommunications

Introduction

The first section dealing with the government's vision, the RDP, economic growth and empowerment and economic empowerment of historically disadvantaged South Africans has been abridged from the second draft of the White Paper on Telecommunications Policy 1996.

The state's vision for the telecommunications sector

The state recognises the central importance of access to telecommunications to the achievement of its economic and social goals. Affordable communications for all, citizens and business alike, throughout South Africa, is at the core of its vision and is the goal of its policy.

The challenge is to articulate a vision that balances the provision of a basic universal service to disadvantaged rural and urban communities with the delivery of high-level services capable of meeting the needs of a growing South African economy.

The vision must therefore reconcile these two seeming opposites within an integrating framework that also allows for a dynamic definition of universal service and facilitates the co-ordination of all available infrastructure in support of its goal.

The RDP

"The telecommunications sector is key to the success of the RDP. Access to communications facilities is not only necessary for the delivery of services in critical sectors such as education and health; it also serves to stimulate the creation of small business and offers a channel of communication to reinforce participation in democratic processes at community, provincial and national levels. It is the essential backbone for development and offers the only opportunity for leapfrogging its relatively slow sequential phases" (White Paper, 1996:17).

Economic growth and empowerment

The telecommunications sector is both a source of economic growth and an enabler of growth in other sectors.

As a source of economic growth the sector itself offers opportunities for locally developed innovative products and services which, with appropriate transfers of skills and technologies, can contribute significantly to economic empowerment of previously disadvantaged communities. The sector can make an important contribution to export growth and import substitution.

As an enabler of growth the sector forms part of the basic infrastructure needed to stimulate economic activity including the creation and development of

business in all sectors and therefore the growth of the economy as a whole. An integrated high-quality network providing value-added services and access to the international information highway is required to support the needs of South Africa's internationally competitive industries and link its economy into the global system. Improved communication with the African region will reinforce South Africa's presence by facilitating exchanges among institutions in the public and private sectors and by providing opportunities for technology exports.

Because of the fundamental importance of the telecommunications sector to national economic growth and development, planning for the sector should be closely integrated into broad economic, trade and social planning and effectively linked with other information policy initiatives.

Economic empowerment of historically disadvantaged South Africans

"Political empowerment of the majority through democratic processes underway in the country must be accompanied by economic empowerment in order to achieve the national goal of sustainable social and economic development. The creation of meaningful jobs, wealth and a decent standard of living for the population will give meaning to their right to vote. Thus, political power cannot bring stability and growth without addressing the issue of historical disparities within the economic power. Besides referring to those who were disadvantaged by the apartheid system in the past, the term 'disadvantaged' also applies to those South Africans who have been historically disadvantaged through discrimination on the grounds of gender and/or disability. In the context of telecommunications the severe disadvantage experienced by members of rural communities under apartheid should receive special attention" (White Paper, 1996:40).

"Economic empowerment of historically disadvantaged communities is a deliberate programme of achieving meaningful participation by all members of these communities in all aspects of productive economic activities in South Africa as consumers, workers, managers and owners. Achievement of sustainable economic empowerment for historically disadvantaged communities will require a deliberate long-term phased programme utilising a wide spectrum of approaches. These will include the extension of telecommunications services to all; broadening equity ownership of current and future enterprises (subject to the state assets debate); creating opportunities for meaningful employment and management; and the effective promotion of entrepreneurship. The effectiveness of any of these aspects and the success of the overall programme of economic empowerment will be rooted in the principle of a broad-based and non-discriminatory involvement of all communities in the economic development of South Africa. Human resource development within the telecommunications sector also needs to be seen as a form of economic empowerment to enable disadvantaged South Africans to participate in the industry effectively" (White Paper, 1996:40).

7.7.1 Residential line shares

The data relating to Mpumalanga were analysed in terms of residential line supply only. During the time of writing Telkom were sensitive about the public release of actual numbers of residential lines per magisterial district. This was due to uncertainty regarding the future restructuring of Telkom and the possible utilisation of data by competitors. The 1996 Census will however place this data in the public domain.

To accommodate Telkom's sensitivities residential line data were transformed to indicate the priority of the various districts. Very high priority districts are those districts that are currently well below the provincial average. The other priority ranges are high, medium, low and very low. The very low priority districts have a residential line penetration that is much greater than the provincial average.

The priority areas in Mpumalanga are distinctly clustered according to the political boundaries of the old South Africa. Mpumalanga has inherited seven districts from the former black areas of Bophuthatswana, KaNgwane and KwaNdebele. All of these fall within the very high priority range. The other districts were formerly part of the white province of the Transvaal.

The high and very high priority districts are clustered at the extremities of the province, in the north-west, south-east, and north-east. The low and very low priority areas are clustered around the centre of the province where the bulk of mining, industrial and commercial activities occur.

Some areas of the old white South Africa are within the high and very high range. Three of these are clustered in the south-east: they are Wakkerstroom, Amersfoort and Piet Retief which are ranked 9,10 and 12, respectively. Moutse, formerly a Transvaal district, is ranked fourth and is adjacent to a high priority cluster of former KwaNdebele and Bophuthatswana districts. Pilgrims' Rest, ranked 11, is formerly a Transvaal district located in the north-east of the province.

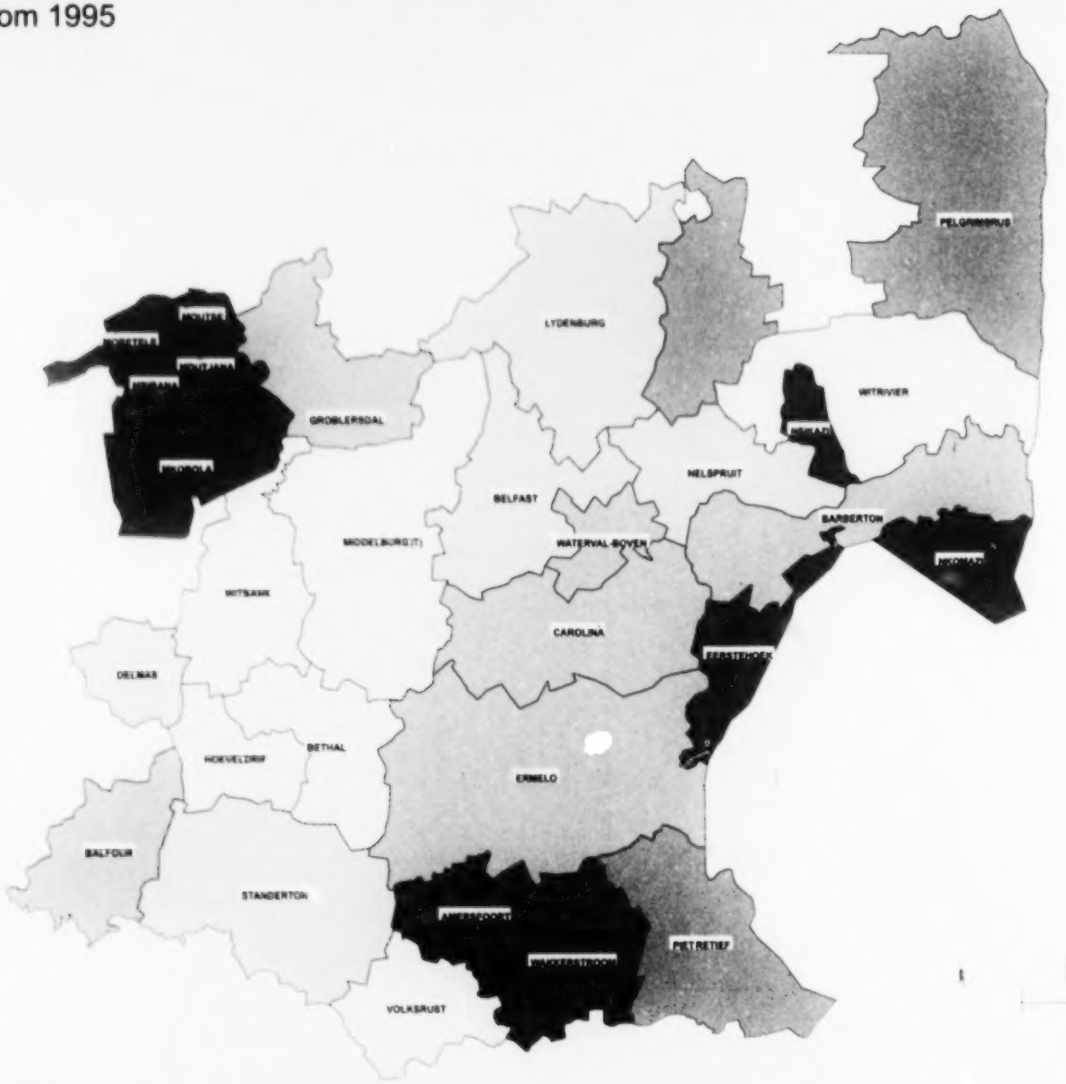
If the telecommunications sector is to be both a growth sector in itself and a means by which other sectors can develop, then a long-term strategy concomitantly to supply universal access to historically disadvantaged rural and urban communities and also to form part of the infrastructure vital to a developing economy is required. Telkom's Vision 2000 strategy hopes to increase the number of subscribers by 2-3 million. This will only be possible if a strategic equity partner (SEP) is found for Telkom. This will allow the rate at which new services are provided to treble. The South African government is Telkom's main shareholder and will have overseen the appointment of an SEP perhaps by March, 1997.

B. O'Leary
GIS Unit
Human Sciences Research Council

MAP 21 : TELECOMMUNICATIONS PRIORITIES

Source : Telkom 1995

HSRC RGN GIS UNIT



N

Priority

- Very high
- High
- Medium
- Low
- Very low

KM

50

Table 21 Telecommunications priorities

DISTRICT	PRIORITY	RANK
Mkobola	Very high	1
Eerstehoek	Very high	2
Nkomazi	Very high	3
Moutse	Very high	4
Moretele	Very high	5
Mbibana	Very high	6
Mdutjana	Very high	7
Nsikazi	Very high	8
Wakkerstroom	Very high	9
Amersfoort	Very high	10
Pelgrimsrus/Pilgrim's Rest	High	11
Piet Retief	High	12
Groblersdal	Medium	13
Carolina	Medium	14
Balfour	Medium	15
Waterval-Boven	Medium	16
Barberton	Medium	17
Ermelo	Medium	18
Belfast	Low	19
Standerton	Low	20
Delmas	Low	21
Lydenburg	Low	22
Nelspruit	Low	23
Volksrust	Very low	24
Witrivier/White River	Very low	25
Hoëveldrif/Highveld Ridge	Very low	26
Middelburg (M)	Very low	27
Bethal	Very low	28
Witbank	Very low	29

7.8 Postal services

"The South African Post Office is an independent public company, fully complying with the regulations laid down in the Companies Act. The State is the sole shareholder. Parliamentary control has been replaced by a Board of Directors, consisting of respected business and community leaders from outside the company, and a Management Board, headed by a Managing Director. The Post Office aims at profit-making. Financial accounts and statements are compiled in terms of the Companies Act. Taxes are paid on any profits and the current shortfall is subsidised by the State" (SA Post Office, 1995:4).

Main activities

"The Post Office is responsible for the handling and delivery of an average of 7,7 million mail items each working day, counter services at more than 1 600 post offices countrywide and the Post Office Savings Bank, now known as the Postbank" (SA Post Office, 1995:4).

The Post Office also acts as an agent for a number of private and public organisations such as Telkom SA for the collection of telephone account payments and the SABC for the collection of television licence fees. Similarly, the paying of pensions, the selling of scratch cards, and the collecting of water and electricity account payments for certain municipalities, as well as the selling of revenue stamps are handled by the Post Office (SA Post Office, 1995:4).

Reshaping the postal services

In 1993, the Post Office embarked on a programme to streamline the postal business to ensure a quicker, more effective service that put its clients first. This entailed the following:

- **Placing basic postal services within easy reach**

Since May 1993, postage stamps have been available at certain local bookshops, supermarkets, chemists, cafés, spaza shops and filling stations. One-stop shopping was introduced by selling postage-paid envelopes, easy-to-use packaging and other articles needed to facilitate the mail service for clients. A larger variety of such services and products was introduced with the opening of postal shops in 1994/95. A single-queue system has been introduced at most of the major post offices to enable clients to do all their postal business, including banking business, at the same counter (SA Post Office, 1995:4).

- **Creating an infrastructure to suit the entire community**

It is Post Office policy to take the post office to the clients. For this reason, more post offices will be opened in shopping centres and inside existing host undertakings. This will make it easier for clients to do their postal business together with other business, even during extended office hours. The first retail postal agencies were to be introduced in 1994/95 (SA Post Office, 1995:4).

- **Giving each person a postal address**

"A massive three million additional postboxes, mainly as transportable mail collection units or postbox lobbies, are to be placed all over South Africa within the next five years to enable each household to receive mail. The focus will be on underdeveloped areas where no postal delivery service exists. This entails clients collecting their own mail at postbox lobbies placed at convenient places after negotiation with communities. The other mail delivery options available include private postboxes, fixed poste restante (transportable postbox lobbies) and street delivery" (SA Post Office, 1995:5).

- **Delivering mail according to set standards**

In April 1993, the Post Office introduced set mail delivery times. This entails delivery within two days in the same town or city, four days between towns and cities in the same province and between major centres in different provinces and five days to more remote places for inland standard economy mail. An additional day should be allowed for non-standardised and insured/registered or COD items. The day on which the letter is posted should not be taken into account. The Post Office's performance is measured against these set standards by external auditors and the Post Office is held publicly accountable to its clients (SA Post Office, 1995:5).

- **Creating a computer network to facilitate counter services**

In 1994 the Post Office started to expand its computer network to link 5 000 counter service points countrywide. The system, known as Excellpos, will reduce paperwork to a minimum, expedite service at the counter and cut the waiting time in queues considerably (SA Post Office, 1995:5).

Inland mail service

Three mail services are available: Economy Mail, Fastmail and Speed Services.

Economy Mail

Economy Mail is the ordinary mail service in South Africa. The new standard postage stamp without face value may be used on all inland standard letters. Should it be used on non-standard items and overseas mail, additional postage stamps must be affixed (SA Post Office, 1995:5)

Fastmail

Fastmail undertakes to deliver items at least one day earlier than Economy Mail in terms of the set delivery times. Fastmail comprises any standardised or non-standardised letter to a maximum of two kilograms, which must be handed in at a post office counter. Clients may use the Fastmail envelopes on sale at post offices or use their own envelopes. Stickers have been specially designed to ensure the item receives priority treatment throughout the mail handling process (SA Post Office, 1995:5).

Speed Services

An extension of the priority mail service, Speed Services provides the following options to get urgent mail items to their destinations within the shortest possible time:

- Same-day delivery
- Overnight delivery
- International speed delivery

To make it even more convenient, clients may choose from

- counter-to-counter delivery,
- counter-to-door delivery,
- door-to-counter delivery,
- door-to-door delivery.

Speed Services guarantees delivery times and will compensate losses. Speed Services is also able to trace mail items at any given time (SA Post Office, 1995:5)

7.8.1 Access to postal services

There is a great imbalance in post office distribution for the different race groups as a result of past apartheid policies; the traditionally white areas have sufficient post offices, while there is a great shortage of outlets in the traditionally black areas. Post offices were established for political reasons and not to meet the needs of the people. The former homeland areas (KaNgwane, Bophuthatswana, KwaNdebele) in Mpumalanga province, where we find the majority of the population, are the worst off.

More post offices are needed especially in Nkomazi, Mdutjana, Mkobola, Nsikazi, and Mbibana since post offices render an important service to the communities. The Mpumalanga province is mainly made up of large farms and rural areas. Most of the people living in these rural areas work in the metropolitan areas and the Post Office is their only means of communicating with their families. It is also their only reliable means of sending money to their families. Furthermore, most rural people bank at the Post Office because there are no banks in these areas.

Most of the few post offices in the black areas are located in the semi-urban areas such as the townships, but their numbers are insufficient with a single post office serving up to 250 000 people or more. Kanyamazane in Nelspruit is a good example of such insufficiency.

People in rural areas are served by postal agencies that render about 20% of the postal services. This means that these people still have to travel up to 50 km to their nearest post office for the services not rendered by the postal agencies.

Accessibility

Access to postal facilities in townships is much better than in rural areas, although township clients have to contend with long queues, because a single post office serves a very large population.

Rural clients who depend on postal agencies are, however, at the mercy of the business operating the postal agency. Such an agency can open and close whatever time suits the owner/operator which, at times, makes it difficult for the people to get service.

Access to postal facilities for people in the most remote rural areas is very poor because of poor roads and inefficient transport.

Future plans

The region has a ten-year plan to provide services to previously unserviced areas. However, the successful implementation of the plan will depend on the availability of funds.

According to this plan the previously unserviced areas with populations exceeding 10 000 people will receive priority. Postal services will be provided by

means of conventional post offices, post points, retail postal agencies and transportable lobby boxes. The region is currently upgrading its postal agencies to retail postal agencies that render 60% of the postal services. The upgrading will be completed within the next six months.

Future plans also include establishing fully fledged post offices within 20 km of a retail post agency to support the agency and service the transportable lobby boxes. Furthermore, the region is relocating poorly situated post offices to more central positions to improve accessibility. The process is however hampered by lack of funds and infrastructure.

Since the lack of postal facilities to the previously disadvantaged communities is a national problem, the problems experienced in the semi-urban and rural areas of Mpumalanga are similar to those of the other regions.

To meet future service demands, the province will have to open an average of five post offices per year for the next ten years. Adequate funding and the necessary infrastructure will enable the postal authorities to expedite the provision of postal facilities and services to all the unserviced areas in the region.

Comments on the data

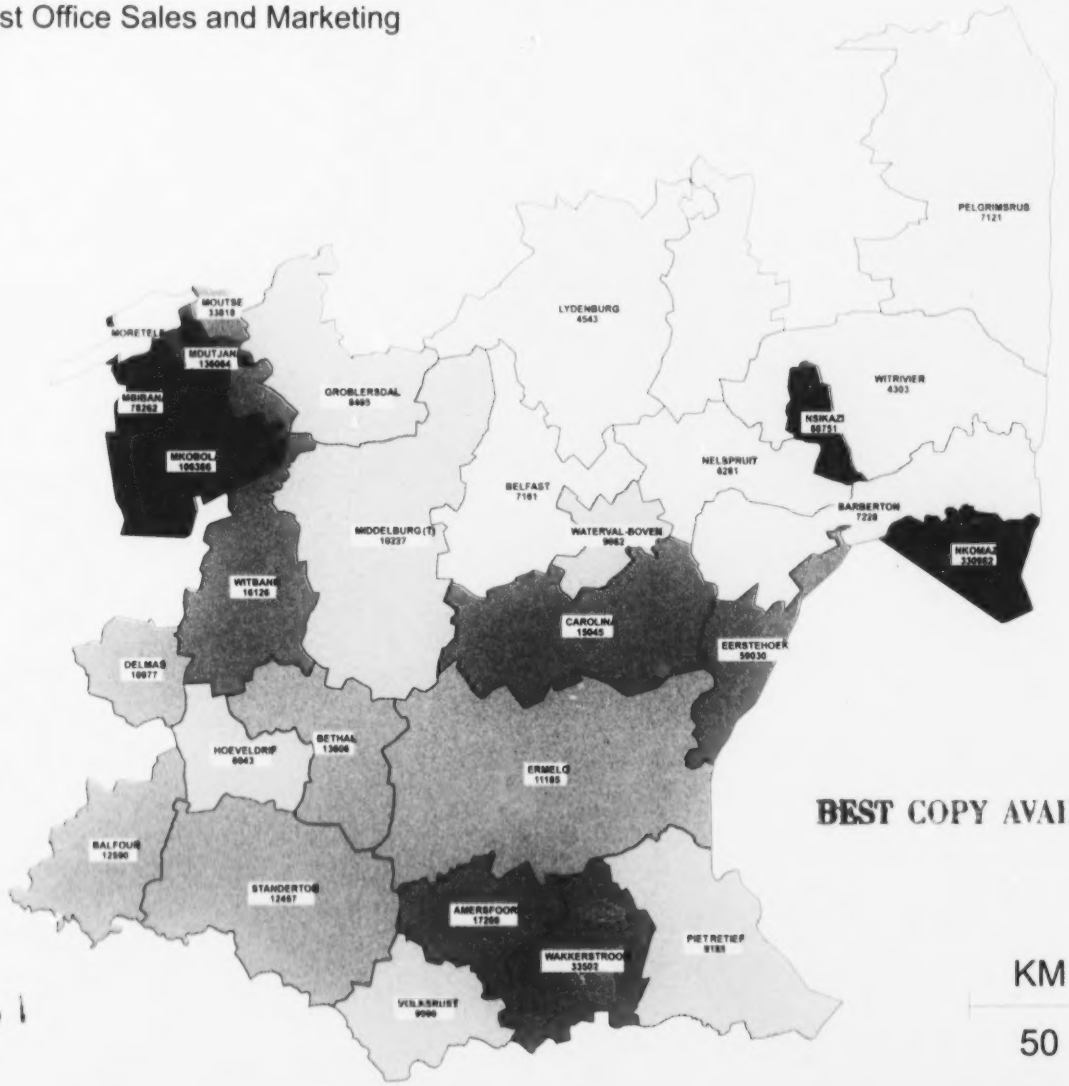
The combination of post offices and postal agencies in relation to the population can be misleading because postal agencies render only 20% of the postal services. District-based analysis does not give a true reflection of the postal distribution network in Mpumalanga because most of the outlets are concentrated in the traditionally white areas and the townships.

N. Mnisi
South African Post Office

MAP 22 : POPULATION PER POST OFFICE AND POSTAL AGENCY

Source : Post Office Sales and Marketing

HSRC RGN GIS UNIT



N

KM

50

Population per post office

4 303	to	7 228
7 228	to	10 227
10 227	to	13 606
13 606	to	59 030
59 030	to	330 982

BEST COPY AVAILABLE

Table 22 Population per post office and postal agency

DISTRICT	POSTAL OFFICES AND POSTAL AGENCIES	TOTAL POPULATION	POPULATION PER POSTAL FACILITY
Amersfoort	2	34 538	17 269
Balfour	3	37 771	12 590
Barberton	10	72 281	7 228
Belfast	4	28 642	7 161
Bethal	5	68 032	13 606
Carolina	2	30 090	15 045
Delmas	4	43 908	10 977
Eerstehoek	4	236 118	59 030
Ermelo	10	111851	11 185
Groblersdal	7	59 253	8 465
Hoëveldrif/Highveld Ridge	20	160 863	8 043
Lydenburg	8	36 346	4 543
Mbibana	1	78 262	78 262
Mdutjana	1	136 084	136 084
Middelburg (M)	14	143 174	10 227
Mkobola	2	212 771	106 386
Moutse	3	101 455	33 818
Nelspruit	10	62 813	6 281
Nkomazi	1	330 982	330 982
Nsikazi	4	355 005	88 751
Pelgrimsrus/ Pilgrim's Rest	4	28 483	7 121
Piet Retief	7	64 297	9 185
Standerton	7	87 198	12 457
Volksrust	3	29 971	9 990
Wakkerstroom	1	33 502	33 502
Waterval-Boven	1	9 062	9 062
Witbank	11	177 390	16 126
Witrivier/White River	7	30 120	4 303

7.9 Police services

General overview

Policing in South Africa has traditionally not developed as a service aimed at meeting the needs and aspirations of our diverse communities. Policing was rather the appropriation and domination by particular governments to enforce specific political ideologies that were inconsistent with the democratic and popular aspirations and demands of the majority of people in South Africa.

The April 1994 elections ushered in a democracy that completely redefined the political and social context within which policing in South Africa is to function. "The advent of democracy demands a fundamental reassessment and transformation of the nature and style of policing. The Constitution prescribes the establishment of a national Police Service that is to be representative, legitimate, impartial, transparent and accountable – one which upholds and protects the fundamental rights of all people and carries out its mission in consultation and co-operation, and in accordance with the needs of the community" (SAPS: Website, 1996:1).

Transformation of the South African Police Service

The transformation process of the South African Police Service is aimed at "meeting the requirements of the Constitution, the policies of the Government of National Unity and the very urgent need for the creation of a safe and secure environment for all citizens in our country that is conducive to development and quality of life. Indeed the prevailing climate of change in South Africa presents a golden opportunity to address a range of issues relevant to democratic policing" (SAPS: Website, 1996:1).

The Reconstruction and Development Programme and the South African Police Service

There are five interlinking or interdependent programmes to support the transformation process. However, as the current budget does not allow for this change, assistance has been sought from the RDP fund and Official Donor Assistance to enable such change. This assistance will be required for the short term only (two to three years), until the South African Police Service budget is able to support RDP principles. The five programmes are the Community Policing Programme; the Information Management Programme; the Victim Support Programme; the Human Resource Development Programme and the Infrastructure Development Programme. These programmes will act as leverage, and will phase in the underlying objectives of the transformation process over the stated period (SAPS: Website, 1996:1).

To provide effective policing, the SAPS and the RDP have established two policing plans: the "Shield and Sword Plan" and "Community Policing".

Shield and Sword

The increasing stranglehold (both physical and psychological) of crime on South Africa must be broken immediately if the democracy and economy are to survive and prosper. The firmest and most decisive action must be taken against crime immediately to prevent South Africa from plunging into the abyss of becoming yet another anarchic country. The eyes of South Africa and indeed the entire world are now on the SAPS to take the lead in the war against crime. The organisational framework within which crime is total fought and beaten is the annual police plan required by parliament. Each police plan is a campaign in the war against crime, to be fought and won within the context of the government's recently announced National Crime Prevention Strategy (NCPS) (*Servamus*, 1996):

Police Plan 1996-1997

"The Police Plan for 1996/1997 is the first of its kind. It is a no-nonsense 'back-to-basics' policing plan aimed at crushing crime wherever it is encountered. It is also a radical reassessment and reorganisation of policing at grassroots level in South Africa. Operationally, the heart of the police plan is 'Sword and Shield' approach where the SAPS takes the offensive by hunting down criminals everywhere, whilst preventing crime by systematically reclaiming streets and rural areas from criminals. The SAPS will take the initiative from the criminals by turning them, and not law-abiding citizens, into the prey. The 'Sword and Shield' approach will simultaneously break the psychological and physical grip of crime and systematically reduce the operational capacity of criminals. Both serious and so-called 'petty crimes' will automatically fall within its ambit to turn the tide against criminals, thereby establishing a culture of respect for the law" (*Servamus*, 1996:1). The following will be implemented with the "Sword and Shield" approach:

Sword

The "Sword" refers to the mobile striking force of the SAPS by which specialised SAPS units dealing mainly, but not exclusively, with crimes prioritised in the police plan, will relentlessly hunt identified criminals, day and night. These categories include hijacking and other vehicle-related crimes, gang-related crimes; taxi violence, possession of and trafficking in illegal weapons, narcotics-related offences, declared political massacres and robberies. "For this purpose 42 additional SAPS Task Forces have been set up to relentlessly hunt identified suspects, over and above other units whose normal function is tracking criminals. Although 'Sword' unit operations will not be confined to specific areas and will criss-cross South Africa, special attention will be paid to Gauteng, KwaZulu-Natal and the Western Cape. Their first aim is to track down and arrest South Africa's 10 000 most wanted suspects – already identified – within 30 days of the launch of the police plan. They will then systematically hunt down other target groups as they are identified" (*Servamus*, 1996:1).

Shield

The "Shield" component of the plan will protect communities by reclaiming streets and rural areas and by deflecting cross-border and international crime. The SAPS will aggressively establish control and dominate specific geographical areas to create a policing shield for communities. A major aspect is that of partnership policing in which the police form specific alliances with certain sectors, for example the business and agricultural sector, shopkeepers, hawkers and the security industry. "Shield" will also feature hi-tech measures such as electronic and camera surveillance of certain CBD areas in South Africa (*Servamus*, 1996). Also, the idea of safety networks will be introduced, namely:

International Safety Network with Interpol to fight international crime such as fraud, counterfeit currency, gun smuggling, narcotics and money-laundering

Regional Southern Africa Safety Network with the police of Lesotho, Namibia, Angola, Zambia, Botswana, Malawi, Tanzania, Mozambique, Zimbabwe and Swaziland

Border Safety Network within South Africa itself, aimed at preventing cross-border criminal activity

Urban Safety Network to reclaim the streets from criminals

Rural Safety Networks, especially in KwaZulu-Natal, to combat political violence and rural crimes.

Parallel and ongoing measures to root out police corruption and improve discipline and services are also an integral part of the police plan. Naturally, the "Sword" and "Shield" components must be seen holistically as mutually supportive and co-ordinated. The 1996/97 Police Plan will make a decisive impact on South Africa's crime situation and so lay the foundation for eventually winning the war against crime. Ultimately, its success will depend on a supreme effort of will and commitment by all South Africans, but especially the SAPS and other organs of state in the justice system (*Servamus*, 1996).

Community policing

Effective community policing embraces the active and willing contribution by the community to all aspects of police practices and procedures. "Such a co-operative endeavour, which stresses joint responsibility by citizens and police for community safety, requires a quantum leap in faith and trust between both parties" (Martin: SAPS Website, 1996:1)

Community policing has three basic premises:

- To work in mutual partnership with the community to protect life and property
- To solve neighbourhood problems
- To enhance the quality of life in our country/cities

The police, being the first line of defence in law enforcement, crime prevention, and public safety should be given permission to carry out these functions as they deem necessary. They cannot do this alone however, and in spite of community policing, the public must become involved as the eyes and ears on the home front.

Methods of community policing

- Increasing foot and bicycle patrols
- Designating certain officers to specific areas of the city to increase familiarity between police and public
- Decentralising by placement of storefronts and neighbourhood offices in crisis areas of the city
- Developing of sub-stations
- Forming of alternative response teams comprising trained personnel such as nurses or social workers to work out of the storefronts
- Holding town hall meetings to gain community co-operation and to increase officers' involvement in extracurricular community activities such as teaching crime prevention and safety programmes

If the public continues its active involvement in law enforcement, crime prevention and public safety efforts, community policing will be a success (Martin: SAPS Website).

7.9.1 Access to police services

The Mpumalanga province is divided into three areas - Lowveld, Highveld and the Eastveld area.

Best or worst-off districts

It is apparent from the map that the rural areas of the former homelands such as KwaNdebele and Kangwane have less access to police services than people within the more urbanised districts such as Middelburg, Nelspruit, Witbank, Ermelo, Piet Retief, and so on. Rural districts that are adequately serviced and fall under the authority of the Mpumalanga police include Nkomazi, Eerstehoek, Nsikazi, Pilgrim's Rest, Moutse, Mbibane, Moretele and Mdutjana.

The Eastveld is largely a rural area that is generally short of staff at existing police facilities, although it has the most police facilities. Most of these police facilities are, however, centred at the smaller police stations in the province, as in the past, the establishment of police stations in the Eastveld was closely related to the size of the population in traditional white areas. The black areas were given lower priority in this regard, thus it is common to find a police facility in a white township, while the neighbouring black township has a much higher population and crime rate. The migration of people from neighbouring states such as Mozambique and Swaziland, as well as the self-governing areas of Kangwane and KwaNdebele, has led to major population changes in the traditional black townships in this area and police services have not adapted accordingly.

Policy guidelines

A standardised formula is currently being used countrywide to determine the personnel strength at a police facility. This formula takes the following variables into account: population, area, crime rate and whether the police facility is situated in a rural or urban area. Various other aspects relating to general policing are also taken into account. The same formula should also be used to determine whether a community, which does not have a police facility does, in fact, need such a facility. At the moment no other policy guidelines exist regarding the provision of police facilities to meet requirements in rural and urban areas.

Issues of relevance in meeting future needs

In future the needs of a community should be paramount when service needs are considered. Local authorities and the established community police forums should become more involved in helping to supply the necessary infrastructure such as buildings and vehicles, because of the current lack of resources, which results in the police not being able to render an effective service to the community under all circumstances.

Accessibility

If the various districts in the Highveld area are compared, it seems that the less densely populated areas have better access to police facilities than the highly populated areas of the former KwaNdebele. The situation has been identified and is being addressed. However, the workforce situation reflects that the former KwaNdebele stations are overstaffed by up to 35% in comparison with the stations from the former SAP, which are understaffed by up to 50%. The "En Masse" process (a recruitment strategy where the police from former white areas will be sent to disadvantaged areas) will promote the redistribution of personnel within the area.

Various RDP projects have been identified in the former homelands that include the renovation and building of new police stations.

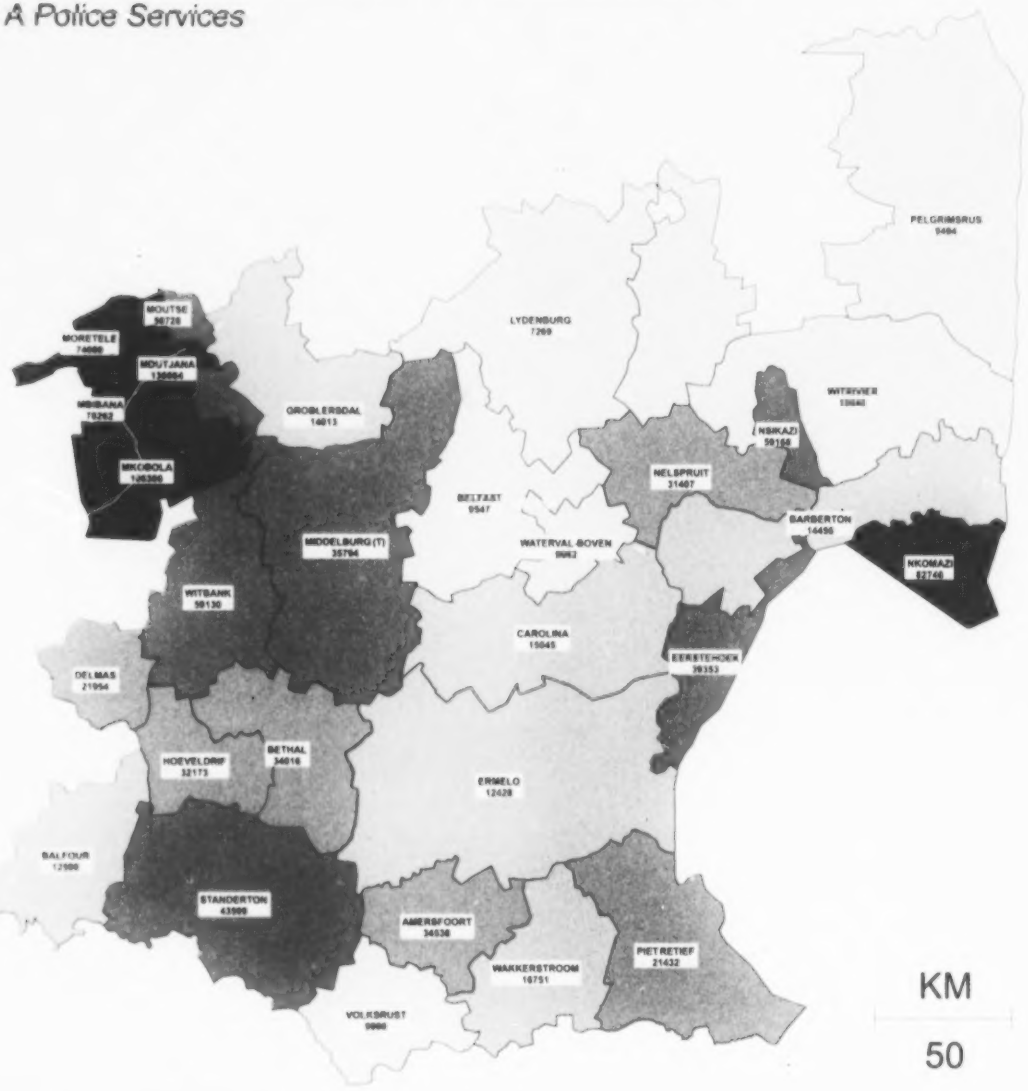
Another approach that has been implemented and which will be expanded, especially in the former homelands, will be the placing of contact points. Besides making the SA Police Services more accessible to the people, the contact points will assist in making the police more visible.

Snr Supt. K. Reyneke
Supt. A.A. Visser
Supt. M. Britz
Capt. M. Bolton
South African Police Service

MAP 23 : POPULATION PER POLICE STATION

Source : S A Police Services

HSRC RGN GIS UNIT



N

Population per police station

	7 269	to	10 040
	10 040	to	16 751
	16 751	to	34 538
	34 538	to	59 168
	59 168	to	136 084

Table 23 Population per police station

DISTRICTS	POLICE FACILITY	TOTAL POPULATION	POPULATION PER POLICE FACILITY
Amersfoort	1	34 538	34 538
Balfour	3	37 771	12 590
Barberton	5	72 281	14 456
Belfast	3	28 642	9 547
Bethal	2	68 032	34 016
Carolina	2	30 090	15 045
Delmas	2	43 908	21 954
Eerstehoek	6	236 118	39 353
Ermelo	9	111 851	12 428
Groblersdal	4	59 253	14 813
Hoëveldrif/Highveld Ridge	5	160 863	32 173
Lydenburg	5	36 346	7 269
Mbibana	1	78 262	78 262
Mdutjana	1	136 084	136 084
Middelburg (M)	4	143 174	35 794
Mkobola	2	212 771	106 386
Moutse	2	101 455	50 728
Nelspruit	2	62 813	31 407
Nkomazi	4	330 982	82 746
Nsikazi	6	355 005	59 168
Pelgrimsrus/ Pilgrim's Rest	3	28 483	9 494
Piet Retief	3	64 297	21 432
Standerton	2	87 198	43 599
Volksrust	3	29 971	9 990
Wakkerstroom	2	33 502	16 751
Waterval-Boven	1	9 062	9 062
Witbank	3	177 390	59 130
Witrivier/White River	3	30 120	10 040

8

DISCUSSION: The overall picture

Service Needs Index

As discussed in Section 4.2 the service variables selected for the Service Needs Index were ratios of population to police stations, post offices and hospital beds; the ratio of road length to district area; the ratio of 6 to 17 year olds to schools; percentages of fully serviced houses, informal houses, formal houses electrified and informal houses electrified and telephone shares.

A district with a low service index score and not requiring development intervention would have the following service profile: low ratios of population to police stations, post offices and hospital beds; a high ratio of road length to district area; a low ratio of 6 to 17 year olds to schools; high percentages of fully serviced houses, formal houses electrified and informal houses electrified; high telephone shares, and a low percentage of informal houses. A district with a high index score requires development intervention and would have the following service profile: high ratios of population to police stations, post offices and hospital beds; a low ratio of road length to district area; a high ratio of 6 to 17 year olds to schools; low percentages of fully serviced houses, formal houses electrified and informal houses electrified; low telephone shares, and a high percentage of informal houses.

According to the map most of the former white districts fall into the higher two ranges of service provision. The exceptions are Amersfoort, Wakkerstroom and Grobblersdal, with Amersfoort and Wakkerstroom, in the south, having the lowest level of service provision. The greatest difference between neighbouring former white districts is 28 Service Needs Index points, that is between Amersfoort and Ermelo.

Former black KaNgwane, KwaNdebele and Bophuthatswana districts fall into the lower ranges of service provision. Moutse, with 64 Service Needs Index points, has the highest level of service provision of these districts. The greatest difference in service provision between neighbouring former black and white districts is 50 Service Needs Index points, that is between Nkomazi (88) and Barberton (38). Moutse (64) and Groblersdal (54) are the two neighbouring former black and white districts that are closest in terms of service provision.

It is clear that the former white districts have a higher level of service provision than the former black districts.

Combined Social and Service Index

The correlation between the Social and Service Indices is +0,85. Districts with high levels of service provision also have high levels of socio-economic status, and districts with low levels of socio-economic status also have low levels of service provision. As correlations do not necessarily indicate causality, it therefore cannot be assumed that the provision of services alone will bring about high socio-economic status. Economic upliftment programmes will have to be implemented in conjunction with the removal of services backlogs.

The Combined Social and Service Index map shows distinct clusters of districts that have similar levels of access to services and similar socio-economic status. The north-eastern region has the highest level development in terms of service provision and socio-economic status. The central and southern districts form a cluster that is the next best in development. The least developed districts are those of former black areas and Amersfoort and Wakkerstroom.

The north-eastern region has the highest level of variation in terms of development: former white districts and former black KaNgwane border on one another, but the highest discrepancy of 45 points occurs between White River (28) and Nsikazi (73).

The north-west block of former Bophuthatswana, KwaNdebele and neighbouring former white districts have a maximum variation in service provision and socio-economic status levels of 33 points. This is between Mkobola (73) and Witbank (40).

Amersfoort and Wakkerstroom, in the south, are the worst off of the former white districts. The greatest difference between these districts and other former white neighbours is 27 points, between Amersfoort (66) and Volksrust (39).

Summary of commentators' views

A salient feature of the **distribution of population** in the Mpumalanga province is its predominantly rural character and few large towns. In the national urban hierarchy, Mpumalanga has six "second order" urban areas each with a dominant urban centre: Witbank, Middelburg, Bethal, Secunda, Ermelo and Nelspruit. As a group these are expected to experience future growth but at a somewhat lower rate than the country's major metropolitan areas. Despite its proximity to Gauteng and its historical dominance, Witbank could lose its pre-eminent position in the province although its geographic location will prevent economic decline. In line with present development trends, it is feasible to assume that Nelspruit will most likely grow more rapidly and form an equally important core area in the province, hence its status as the provincial capital, a choice made after considerable debate and investigation.

Mpumalanga consists of a section of the former Transvaal province as well as the two former homelands, KaNgwane and KwaNdebele. The latter areas functioned as dormitories for the former Eastern Transvaal and the Witwatersrand, and had few **employment** opportunities in the formal sector. The formerly white districts

of Mpumalanga had the highest employment rates. The 1991 Census showed that in these areas the rates of employment ranged between 28% and 66% of the adult population. The rates of formal employment as a percentage of the people who actually want to work, that is the economically active population or labour force as defined in the relevant section, were between 57% and 75%. Not surprisingly, the commercial agriculture and forestry areas had high rates of employment, as did the capital, Nelspruit. Employment rates were also high in the western corridor from Highveld Ridge to Groblersdal. The southern-most districts again had the lowest employment rates among the former Transvaal districts.

The more urbanised and industrialised areas had the highest percentages of **functional literacy** among the population. The highest percentages were found in Witbank (55%), Highveld Ridge (52%), Middelburg and Nelspruit (both 48%). The three worst-off areas were Amersfoort (27%), Wakkerstroom (24%) and Nkomazi (24%). The previous KaNgwane areas, namely Nsikazi, Nkomazi and Eerstehoek were the most densely populated. Of these areas Nkomazi had the lowest functional literacy (24%). The total picture for functional literacy of adults is rather grim, with the highest percentage of 55% in Witbank.

The highest **pupil:teacher ratios** were found in the north-west and southerly districts of Mpumalanga. The highest ratio was in Groblersdal (51:1), followed by Highveld Ridge (47:1) and Wakkerstroom (also 47:1). The pupil:teacher ratio in Highveld Ridge is of particular concern, since in 1991 the area had a high number of enrolments (18 860) and was densely populated.

The lowest **poverty** gaps were found in the industrial core of the province, namely the Witbank and Highveld Ridge districts. Spatially, poverty in the former Transvaal portion was concentrated in the southern-most districts of Mpumalanga. The poverty gaps were notably higher in the former homelands.

The relevant map shows that **population density** patterns very much follow the trend of the total population data. Twenty-nine per cent of Mpumalanga's districts have a population density below the South African average of 33,3 persons per km^2, thus confirming the tendency towards sparse distribution. Interpretation of the data reinforces the vast contrast between the areas that fell into the former black homelands with their associated problem of population pressure and the less heavily populated former Transvaal areas. It also shows a large concentration of people in the limited number of main towns that lie in areas of sparser settlement.

Preliminary **hospital bed** occupancy statistics for the period April 1996 to January 1997 indicated that of the three Mpumalanga regions only the Highveld was operating at the optimal level. The Lowveld was slightly above optimum and the Eastveld was approaching overcrowding at 97% bed occupancy.

The map on informal housing show that the former black areas are all in the upper three ranges (46 to 92%) except for Mdutjana, which has 45% **informal housing**. As these districts are generally rural, a high percentage of traditional housing can be expected in these areas. The lack of western style development in these areas is evident in the low numbers of formal houses. Moutse (81%), a

former white area, is in the highest range and is adjacent to the former Bophuthatswana-KwaNdebele cluster. The fragmented KaNgwane cluster in the east of the province shows a very high percentage difference from its neighbours: Nkomazi has 57% more informal housing than neighbouring Barberton, a former white area; Nsikazi has between 35 and 29% more informal housing than its former white neighbours and Eerstehoek is closer to its former white neighbours, having a percentage difference of between 2 and 19%.

The design and pricing of new **retirement** village developments should be within the disposable income of the population in the area, with greater emphasis on the final product meeting the needs and winning the confidence of the community, as well as giving added protection to the elderly according to the Retirement Act of 1988. The greatest need in the black elderly community is that of proper accommodation for service centres, luncheon clubs, etc. Old age homes and retirement villages are not the top priority in the black community. The greater number of elderly in this community stay with families and the pension payout forms part of the family income.

All of the former black areas fall into the lowest percentage range of on-site **water provision**, that is between 9 and 21%. Moutse, adjacent to the former KwaNdebele districts, and Wakkerstroom in the south are former white Transvaal districts that are also in the lowest range. The north-western, southern and mid-eastern peripheral clusters have low on-site provision, but high levels of off-site provision. In these areas there are also high percentages of households with no access to water, hence a vast amount of work is required in the province to extend provision from off-site to on-site and at least provide off-site to those with no access.

Regarding water provision, the following districts are important in terms of prioritisation: the former KwaNdebele and Bophuthatswana districts clustered with Moutse, Groblersdal, Amersfoort and Wakkerstroom from the former Transvaal, as well as the former KaNgwane districts. Prioritisation for **sanitation** is the same as for water, but also includes the many districts that have a greater than 50% access to bucket and pit latrines.

The analysis on **electrified informal and formal housing** suggested that the backlog was greatest in the former KwaNdebele, KaNgwane, Bophuthatswana districts as well as those of Delmas, Highveld Ridge and Amersfoort. The highest cost for full electrification would be incurred in KaNgwane, followed by the Eastvaal RSC and Bushbuckridge, respectively. (The Delmas, Hoëveldrif and Amersfoort districts fall into the Eastvaal RSC. Bushbuckridge falls just outside the Mpumalanga border, close to Kuduspruit in the Pilgrim's Rest district.) Farm workers throughout the province have very low provision at 22%.

The lower two ranges of 0,15 to 0,3 km **road** length/km² occur in districts clustered in the eastern half of the province. The exceptions are found in the north-west of the province and include Moretele, Mbibana, Mkobola and Groblersdal. Five of the 7 former black districts and 11 of the former 22 white districts fall into the lower two ranges, that is 71% of former black areas and 50% of former white areas. All five former black areas in the lower two ranges

have population densities of over 33 persons/km². The 11 former white districts have population densities of less than 27 persons/ km². The population pressure on roads in the districts in the lower two ranges is therefore greater in the former black districts.

The **residential telephone** priority areas in Mpumalanga are distinctly clustered according to the political boundaries of the old South Africa. Mpumalanga has inherited seven districts from the former black areas of Bophuthatswana, KaNgwane and KwaNdebele. All of these fall within the very high priority range. The other districts were formerly part of the white province of the Transvaal. The high and very high priority districts are clustered at the extremities of the province, in the north-west, south-east, and north-east. The low and very low priority areas are clustered around the centre of the province where the bulk of mining, industrial and commercial activities occur.

There is a great imbalance in **post office** distribution for the different race groups as a result of past apartheid policies: post offices were established for political reasons and not to meet the needs of the people. The traditionally white areas have sufficient post offices, while there is a great shortage of outlets in the traditionally black areas. The former homeland areas (KaNgwane, Bophuthatswana, KwaNdebele) in Mpumalanga province, where we find the majority of the population, are the worst off.

The Eastveld has the greatest number of **police** facilities, most of these are centred at the smaller but police stations in the province, as the establishment of police stations in this area was closely related to the size of the population in the traditional white areas in the past. The black areas were given lower priority in this regard, thus it is common to find a police facility in a white township, while the neighbouring black township has a much higher population and crime rate.

Conclusion

The general impression created by the commentators is that the province is predominantly rural and that there is an inequitable distribution of services and socio-economic status between former black and former white areas. The former black areas had comparatively high levels of population pressure on low levels of service provision. The low level of black socio-economic status and past political restraints on residential location mitigated against the black population being able to better itself or to move to better areas.

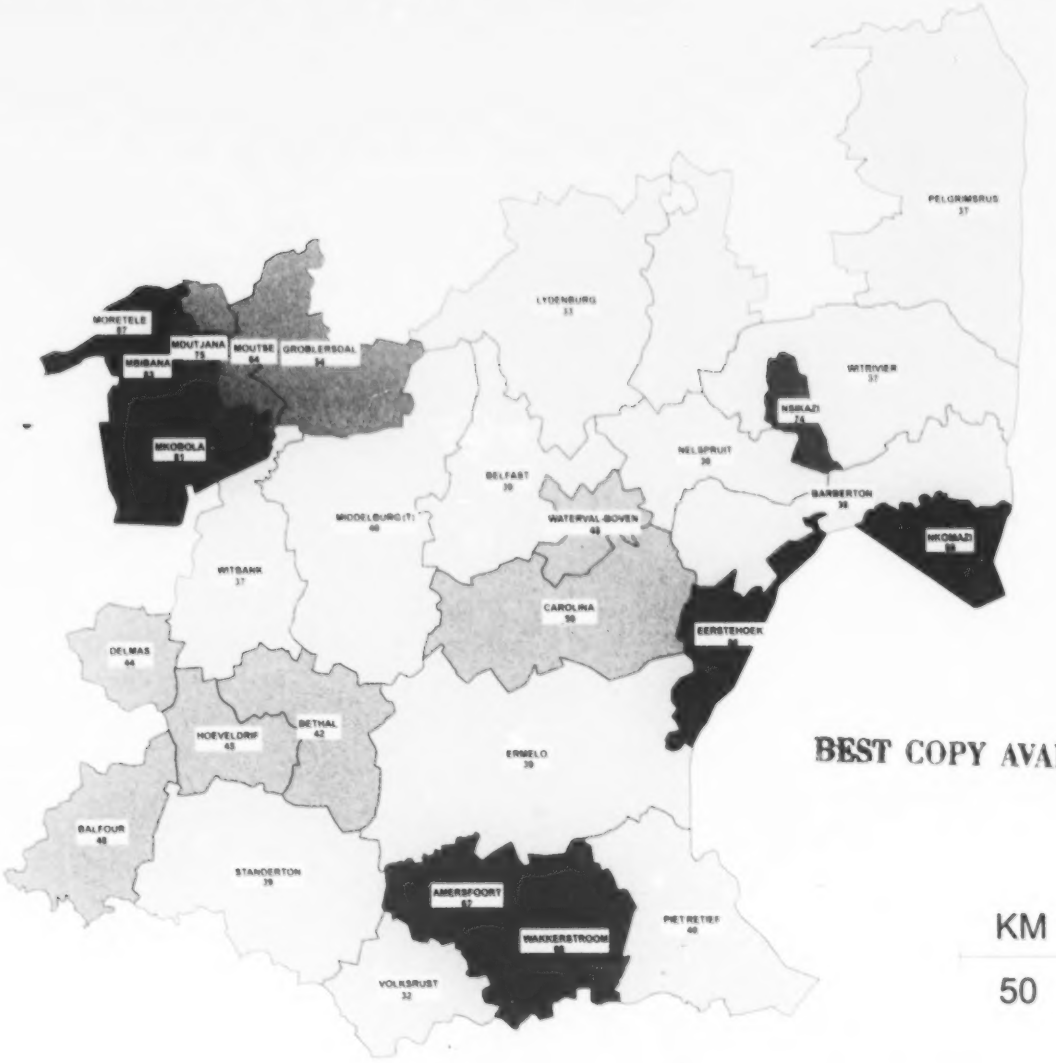
Future research could monitor changes in service provision and socio-economic status. The main sources of data would be the 1996 Census, service providers and the RDP programmes. The 1996 Census would enable the Social Needs Index to be updated, but would provide information on services provided to households only. Service providers and government departments could be sources of information regarding the provision of public services. The most important facet of the 1996 Census is that information on household services will be available at enumerator area (EA) level. As EAs usually are socio-

economically homogenous, this will allow rigorous analysis of the relationship between socio-economic status and service provision.

It is highly probable that as there is now a political will to provide services and economically uplift previously disadvantaged communities, these communities should simultaneously experience improved socio-economic status and service provision. The process of creating an equitable society should be monitored by the above research to provide insight into the rate of change in the spatial distribution of services as well as socio-economic status. It is hoped that this document and future research will contribute to the process of uplifting the disadvantaged and thereby contribute to the creation of an equitable South African society.

B. O'Leary
Human Sciences Research Council

MAP 24 : SERVICE PROVISION INDEX



UNDERDEVELOPED AREAS
HAVE HIGHER INDEX SCORES

N

Index

30 to	42
42 to	53
53 to	65
65 to	76
76 to	88

KM

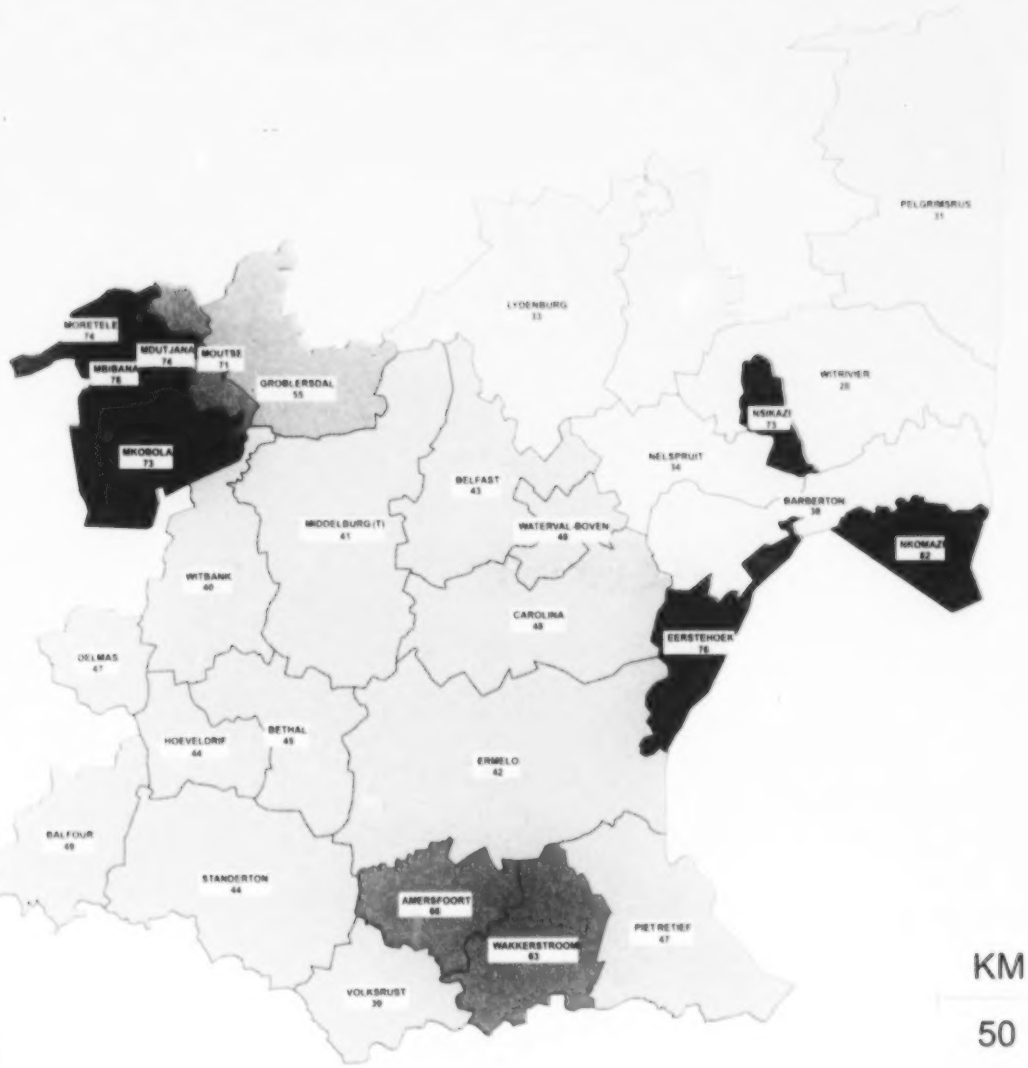
50

BEST COPY AVAILABLE

Table 24 Combined Social Needs and Service Provision Index

DISTRICT	SOCIAL INDEX	SERVICE INDEX	COMBINED INDEX
Nkomazi	75	88	82
Mbibana	72	83	78
Eerstehoek	72	80	76
Moretele	60	87	74
Mdutjana	72	75	74
Mkobola	65	81	73
Nsikazi	71	74	73
Moutse	77	64	71
Amersfoort	64	67	66
Wakkerstroom	58	68	63
Groblersdal	56	54	55
Balfour	50	48	49
Waterval-Boven	49	46	48
Carolina	46	50	48
Delmas	49	44	47
Piet Retief	53	40	47
Bethal	47	42	45
Standerton	48	39	44
Hoëveldrif/Highveld Ridge	42	45	44
Belfast	46	39	43
Ermelo	45	39	42
Middelburg (M)	41	40	41
Witbank	42	37	40
Volksrust	46	32	39
Barberton	38	38	38
Nelspruit	37	30	34
Lydenburg	32	33	33
Pelgrimsrus/ Pilgrim's Rest	24	37	31
Witrivier/White River	19	37	28

MAP 25 : COMBINED SOCIAL NEEDS AND SERVICE PROVISION INDEX



N

Index

	28 to 39
	39 to 50
	50 to 60
	60 to 71
	71 to 82

KM

50

9

BIBLIOGRAPHY

Atmore, E. 1996. *Affordable early childhood development provision for preschool children in South Africa.* Human Sciences Research Council, Pretoria.

Calitz, J.M. 1996. *Population of South Africa: Updated estimates, scenarios and projections 1990 - 2020.* Development Paper 109. Development Bank of Southern Africa, Midrand.

Central Statistical Service (CSS). 1994. *Provincial statistics 1994. Part 7 Pretoria-Witwatersrand-Vereeniging.* Report No. 00-90-07 (1004). Central Statistical Service, Pretoria.

Davis, M. 1996. *South Africa's electrification programme: Progress to date and key issues.* Volume 13, Number 3. Development Bank of Southern Africa, Halfway House.

Department of Education. February 1996. Education White Paper 2. *The organisation, governance and funding of schools.* Government Printer, Pretoria.

Department of Health. 1996. *Restructuring the national health system for universal primary health care.* Government Printer, Pretoria.

Department of Housing. 1994. White Paper: A new housing policy and strategy for South Africa. *Government Gazette* No. 16178. Pretoria.

Department of Housing. 1995. *Annual Report of the Department of Housing.* Government Printer, Pretoria.

Department of Housing: 1996. *Housing statistics.* (Website).

Department of Posts, Telecommunications and Broadcasting. 1996. Second draft of the White Paper on Telecommunications policy. *Government Gazette* No. 16995. Pretoria.

Department of Transport. May 1996. *A future for roads in South Africa.* Government Printer, Pretoria.

Department of Water Affairs and Forestry. 1994.White Paper. *Water supply and sanitation policy.* Government Printer, Cape Town.

Department of Water Affairs and Forestry. June 1996. White Paper. *National sanitation policy (draft).* National Sanitation Task Team. Pretoria.

Department of Welfare. 1994. *Discussion group on ageing.* Pretoria.

Department of Welfare. 1996. *South African Council for the Aged database.* Pretoria.

Department of Welfare. September 1996. Draft White Paper for a population policy. *Government Gazette* No. 17529. Pretoria.

Department of Welfare and Population Development.. 1996. White Paper for Social Welfare *Principles, guidelines, recommendations, proposed policies and programmes for developmental social welfare in South Africa.* Government Printer, Pretoria.

Erasmus, J. 1993. *Statistics on living standards and development: regional poverty profile: Eastern and Northern Transvaal.* Development Bank of Southern Africa, Midrand.

Erasmus, J. 1995. *South Africa's nine provinces: a human development profile.* Development Information Paper 28. Development Bank of Southern Africa, Midrand.

Eskom. 1995. *The electrification project.* (Eskom website).

Golding, A.P.1992. *The social impact of electricity in a developing community.* Eskom Conference Proceedings: Electricity Beyond the Grid. Eskom.

Health Systems Trust. 1996. *Health and welfare in the North-West province: implications for planning 1996.* Health Systems Trust and The Department of Health. Durban.

Maree J, 1995. *Chairman's overview.* (Eskom website).

Martin, A.H. (Dr.). *Community policing: the London model.* University of Western Ontario. (SAPS Website).

Meintjies, C.J., Rousseau, B.G. & Viljoen, D.J. 1995. *Mpumalanga: statistical macroeconomic review.* Development Information Paper 102. Development Bank of Southern Africa, Centre for Policy and Information, Midrand.

Montgomery, G.E. & Schuch, H.C. 1993. *GIS Data Conversion Handbook.* GIS World Books, Colorado.

Morgan A, 1995. *Chief executive's report.* (Eskom website).

Press release. 1996. *Telkom acquires foreign loan to boost its Vision 2000 project.*

Press release. 1996. *Telkom integrates Million Line Project (MLP) into Vision 2000 and SEP process.*

Smith, D. M. 1987. *Geography, inequality and society.* Cambridge University Press, Cambridge

South African Police Services. 1996. *SAPS Magazine SERVAMUS.* (SAPS Website).

South African Post Office and Telkom S.A. 1995. *Communication: a guide for teachers and pupils.* Corporate Communication, Pretoria.

This book is one of a series that uses Geographic Information Systems (GIS) to outline the need for and provision of services in each of the nine South African provinces. A global view or indicator of the simultaneous influence of the socio-economic status of people and the level of provision of domestic services and public facilities in all districts is needed. Such a view encapsulates the social and service profile of each district, and can be obtained, firstly, by developing indices for the social and service variables for each district. A single index, or benchmark, of levels of socio-economic status, household services and public facilities in each magisterial district is created by combining these indices.

Graphic and tabular representations of levels of development can highlight spatial inequalities and thereby raise questions of causality. To provide information about local levels of development, knowledgeable persons involved in service delivery in each province were contacted for their comments. The books in this series contain maps, tables and contributions from spokespersons in NGOs, universities, government departments, service providers, parastatals and research organisations.

It is hoped that these books and future research on the rate of change in socio-economic status and service provision will contribute to the creation of an equitable South African society.

HSRC
RGN
Publishers / Uitgewery

ISBN 0-7969-1851-1

BEST COPY AVAILABLE